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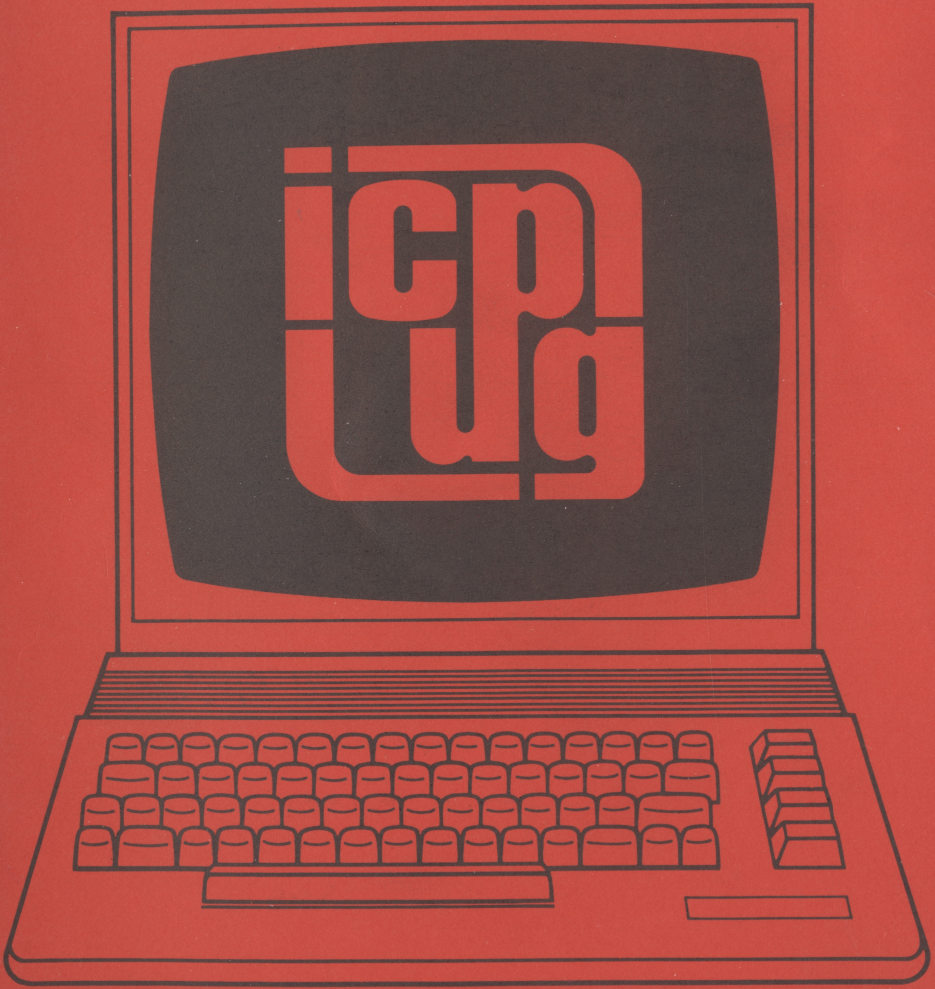

Europe's first independent magazine for CBM users

Volume 10 Jan/February 1988 Number 1

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INDEPENDENT COMMODORE PRODUCTS USERS GROUP newsletter

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Europe's first independent magazine for CBM users

MIKE'S MEANDERINGS

by Mike Todd

Happy New Year and all that! I trust that a good time was had by all, and that Santa brought you all you wanted to add on to your C64 or your C128 - or perhaps he even brought you an Amiga?

Anyway, apart from having to work over Christmas and New Year (I guess someone's got to be there to bring you your Christmas TV and Radio [Judging by this year's offerings I think Mike could have stayed at home and played with his Amiga - Ed.]) I spent many happy hours putting together the Newsletter index which you will find elsewhere in this healthy tome.

The preparation of this index is done using SuperBase on the 8296D (the 80 column "business" machine, with two 1 Mb drives built in) and uses the programming capability of SuperBase to the full.

It all starts with a database having fields for the main article title, it's author, the starting page, and issue month - the key field being a reference number which is inserted automatically with some simple programming.

To make life easy in preparing multiple index entries for the same article (for instance, each Discount Corner requires more than a dozen individual entries), each record has 12 extra lines, each with a field for the index entry text and one for the page number. I then read through each article, entering data into the fields as I go.

Once complete, with about 260 records entered, I run a program which splits the records into individual index entries and puts them into another file with each index entry occupying a single record. This may sound long winded, but it avoids my having to re-key common data for each of the duplicated entries.

The resulting database file, with as many as 800 entries, is then sorted on the index entry text into alphabetical order.

At this point I can make some modifications to keep the index tidy and consistent and then produce an ASCII text file to allow it to be word-processed. This is done using the EXPORT command, but specifying my own field separators, otherwise SuperBase would put each field on a new line and there'd be a lot of work to be done in the word-processor.

I would normally read this ASCII text into my Wordcraft word-processor, re-save the text in Wordcraft format, run it through a massage program to replace all the field separators with Wordcraft TAB control codes and then Hugh (our previous Editor) would read it into his Wordcraft, do a bit of tidying up and then print it. That's exactly how the index in the Jan/Feb 1987 Newsletter was produced.

For the latest index, we're working with a different word-processor, and VizaWrite doesn't like Wordcraft files, nor can I perform the substitution of field separators with TAB's to make life easy for our Editor. However, what I can do is send the page numbers to an ASCII file, the issue month details to another file, the descriptive text to a third and finally the authors to a fourth. Since they're all in the correct order, all our Editor needs do is merge each file in as a complete column within VizaWrite and, with a bit of luck and a following wind, everything should align itself correctly. [All our Editor needs do... well it didn't turn out quite like that. Your Editor has discovered some rather major faults within VizaWrite Classic. Firstly, when the columns were merged, I was unable to put forced page breaks in because the column format set-up was disrupted, and any re-workings were unrealistic. Then the SEARCH and REPLACE command started to behave irregularly, the only way at the moment I can convert from WordCraft to Viza format. To cap it all, even if the columns had worked, the micro-proportional spacing used in the Newsletter would have been disrupted. I now have a list of problems with this package as long as my RS232 lead. Enough of my woes. Suffice it to say that the long-suffering Todd sent it to me in a format which, although extremely tedious, worked. Expect to hear from my lawyer in the near future, Mr Lacey - Ed.]

The proof of the pudding... well, you just need look at the results at the end of this Newsletter [Ho hum! - Ed.].

The TRANSACTOR

In the previous Newsletter, Betty Clay made reference to the TRANSACTOR magazine. This is a "Tech/News" journal for all Commodore computers, pubished in Canada six times a year. I've always been a very keen fan of this magazine as it takes a more in depth approach to Commodore computing than any other I know (except the ICPUG Newsletter, of course!) and is aimed squarely at the programmer..

It has articles by many of the great names from the Commodore world including Jim Butterfield, is very well presented, and never misses a challenge. Indeed it was the TRANSACTOR whch made the first public presentations of the old save-with-replace bug in the 1541.

It rarely (if ever) publishes games, but it does publish many utilities, applications programs, programming tips for virtually every Commodore computer and news, views and gossip.

Well, 1988 sees two major changes for the TRANSACTOR - firstly, it is splitting into two. The old TRANSACTOR will continue, and will cover the 8-bit machines (C64, C128 etc.) and there will be a new TRANSACTOR for the Amiga - these issues will be published in alternate months.

EDITORS' NOTEBOOK

We start 1988 - a year that looks already certain to break membership records, judging by the January renewal rate - with the Newsletter in its 10th year. ICPUG isn't 10 years old quite yet, but it's still a cause for celebration. 10 years is a long time for a user group to survive, especially in the micro computer world, especially when the company you support is Commodore. Expect some History lessons and nostalgia trips in the next few issues. The first comes from Joe Griffin, and outlines the history of the PET. Expect also some changes to the Newsletter. The first of these appears courtesy of Mike Todd - the issue number of the Newsletter appears in bar form on the spine.

I arrived at this month's Commitee meeting with the belief that, even with Mike Todd's remarkably detailed 1987 index (read about that story in Mike's Meanderings), we wouldn't have enough articles to fill the Newsletter come deadline. As it turned out though, we were most pleased by the quantity and quality of articles (produced, I'm sure, whilst still under the influence of turkey and pud) that were submitted the following week. This issue is the biggest the current team has produced so far. In fact, gaining any more weight would have taken it over the next postage threshold, I am told. How's that for value?

Even though it means a high proportion of Amiga articles, which some deem unfair, I feel that ICPUG, the Commodore user group, has certain duties in supporting, reporting and analysing new machines. We have all experienced the void of reliable, useful data and the plethora of redundant, repeated and trivial nonsense that accompanies a new computer. We are known and trusted for being authorities on subjects, providing refreshing, original and well researched information. Indeed, some have come to rely solely on our views, and so we must continue to bear this responsibility. The true value of this "biased" reporting comes to light in cases such as the now (in)famous Virus. Quite why this item exploded in the Press with such vehemence has yet to be revealed. In the meantime, it is the duty of those privileged and enlightened members of ICPUG to analyse this problem and supply advice and antidotes to the uninformed masses struggling in a brave new world. Two articles on the Virus subject have been included in this issue, written I might add before the story broke in the National Press and on television. Both are worth reading.

Our Newsletters are more than just User Group journals. They are reference books, which should be included in any self-respecting library.

On lighter matters, an advance ordering form for the Commodore Show in June (see Exhibitions for more details) will be supplied next issue. I hope to be there for all three days, and I look forward to seeing y'all there. There are rumours of another Commodore Show in November. This is not yet confirmed, and no details are forthcoming, but we will keep you informed.

Replacements for the pages that were mis-printed in the last Newsletter are included with this one, courtesy of our printer. Some members recieved copies with repeated pages, on the whole 551/552 were actually 551/550, and 593/594 came out as 595/594. There are various combinations, occuring due to a stacking fault, so alternative replacements are provided.

Jim Kennedy, our chatty Chairman, apologises for the absence of a Jim's Jottings, and the further delay of his review for Desktop Viza. Jim was visiting his native California over Christmas, but was unable to take his computer with him. Considering the amount of articles we recieved I don't think Jim need worry too much.

Finally, I have taken delivery of an 8250 80-track double-sided disk drive, which means that not only can I now recieve submissions in this format, but the whole Newsletter, source files and all, can now be produced on one disk.

BB

IAIN'S INSCRIPTIONS

Happy New Year to one and all. After last issue's 'Micky Take' by my other [and better - Ed.] half I've decided to adopt 'Inscriptions' as the title for my little outburst each month.

So, what has 1988 in store for us computing wise - more ghosts in our disk drives courtesy of BB? No seriously, we here in ICPUG Towers hope to bring you all the news and action as it occurs hot off the press (or is it laser?). So get writing and send us some good 'n' meaty articles to make this year's issues the best yet. Now I'd like to pose a couple of questions to you, the readers. A bit of market research if you like...

(1) Would you like to see any games software reviews in this magazine?

(2) BrainBoxes in Liverpool are offering to make an interface to transfer data between most Commodore machines and disk drives. The expected cost will be around £90, providing there is a sufficient response. Is anybody interested?

Please send your answers to me — my address is inside the front cover.

Well that about wraps it up until the next issue. By the way 'Tim (always high on the Bitstream) Arnot' has now threatened to write "The Whole Memory Guide to the Amiga Joystick's Fire Button" whatever next!

IG

⁂

The second change concerns its availability in the UK. Up until now the only way of receiving TRANSACTOR was to either buy a subscription in the USA and have it air-mailed over here, or to take advantage of a UK subscription address. Both were expensive options.

Well, as from January 1988 the TRANSACTOR is published simultaneously in the UK - initially with no changes, but as time goes by it is hoped that some UK and European input will be included to replace some of the "local" material that the magazine publishes.

The cover price for each is £2.50 per issue and will be available on subscription only to start with. There is little doubt that this magazine is a must for anyone who takes his or her programming seriously.

Subscriptions can be obtained by sending a cheque or postal order (payable to TRANSACTOR (UK) Ltd.) to 2 Langdale Grove, Bingham, Nottingham NG13 8SR. The annual subscription for each of the magazines will be £15 which includes postage and packing - don't forget to state which one of the two magazines you require! If you really want to keep in touch with the Commodore world, then £30 for a year's subscription to both would be money well spent.

The Newsletter

There is little doubt that, under our previous Editorial team (Hugh de Glanville and Henry Velleman) the standard of English in the Newsletter was of an exceptionally high standard. This has never been an easy achievement since the standard of writing received has been of very variable quality and considerable effort was involved in re- writing to maintain the standard.

The current Editors have much the same job to do, although I know that it is a very time-consuming exercise. If you consider this in association with the need to check for consistency in names and spelling (for instance, AMIGA and Amiga - or disk versus disc) their task is a mammoth one.

Simply having to re-cast a sentence or two may not be too bad; re-writing a paragraph that makes sense to the author, but which needs a more logical development to make sense to the reader, is a different matter.

While I was preparing the index, I had to read through every article in the 1987 issues and I was very aware of the different styles amongst the many authors. Some clearly do not read their material having committed it to disk - as a result one sees sentences which are, with such complex structures like that of this sentence, an example of one with lots of commas and thoughts and having several sub-clauses, very difficult to read (sic).

At times, I even found it difficult to work out what an article was about, and so I was unable to afford it an adequate index entry.

So, a plea to all contributors (and that includes those who contribute regularly) - please read your work, and be prepared to re-write sections before submitting it. It's surprising how much easier an article can be to read if this is done.

A single read at the time of writing is not enough on its own - leave it 24 hours and have another read - and then, just before submitting it, do it again. If you read aloud, and listen to what is being said, then you should be able to pick out some of the dreadful sentence structures, the mis-typings and even the odd spelling mistake (don't rely on spelling checkers - they're okay for the obvious mistakes, but they don't pick out the errors which matter).

However, don't let this put you off submitting material - a little care is all that's needed, not a degree in English!

Origins of hackers

I was very interested in a couple of items in Jim Kennedy's jottings last time round. The first was his discussion of the origin of the term 'hacker'.

In the 60's, when I was a youngster playing around with electronics, a hacker was someone who was prepared to go into the innards of some piece of electronic equipment, clearing (or hacking) his way through the complexities in order to find out how the thing worked. The analogy being with one who hacks his way through the jungle undergrowth in order to make progress.

As time went on, the term took on a slightly derogatory meaning in that it implied a rather cavalier approach to problem solving. A hacker was one who hacked his way towards a solution rather than taking a well thought out, or logical route - the jungle analogy continues with the hacker taking the ill-informed route through the dense undergrowth, rather than following the accepted road to his goal.

All activities seemed to have their hackers - mathematics students, car enthusiasts, amateur radio and computer freaks being amongst them.

In more recent years, we seem to have reverted to the original analogy - the hacker being the one who clears away the trees in order to see what is going on at the heart of the jungle.

The comms hacker, whose intent is finding his way into other people's computers, is hacking his way through the outer security protection.

So, although there may be several different interpretations of the word 'hacker', there is a consistency in that they are all based around the same analogy. This particular verbal metaphore seems to have been around since the second World War when an Uncle of mine can recall the less careful aircraft mechanics being referred to as hackers.

Passwords

In the same article, Jim describes some of the thinking behind chosing passwords. I would certainly agree with some of his points, but the psychology of passswords is complex and depends very much on what is required both by the user and computer system involved.

If a memorable password is required (to avoid its being written down) a short password is likely to be useful. A four character password is generally more than adequate! It can even come from your mother's maiden name.

As an example, my mother's maiden name is Beal. Now, clearly I'd be a fool to use BEAL, Beal or beal as a password - but what about BeAl or ALBE or CFBM or some other derivative? You need only remember the rule you used to change the maiden name into the password - remebering a rule is very much easier than remembering a sequence of characters.

All you are protecting against is the hacker who may want to break into your account, and who has benefit of some knowledge of you. If you must protect against a hacker who is prepared to spend hundreds of hours trying every permutation of every ASCII character, then your account is clearly much more valuable than most and you could expand the four character password to something larger. Perhaps picking a fairly obvious word, and applying some rule to it - how about ReKcAh?

From my experience, most hacks are perpetrated using passwords and computer IDs which are straightfoward and obvious (such as IDs like 2222222222 and passwords such as 'engineer'), or which have been gathered using a variety of spying techniques - a good example is my local travel agent who has (or rather had!) his PRESTEL ID and password written on a piece of paper stuck to the side of his terminal.

The former breach can be simply avoided using a common sense approach - while the latter can by being more careful.

If you must write down your IDs and passwords in your FiloFax, use some encoding rule - to show you what I mean, I have the following in my FiloFax:

Prestel 01-522-4917 (x585) r1
PSS n-upeez3-032cut
Compuserve 70117,634 r2
Midland Bank 701477 - 2577 - 2577+TODD

I can instantly work out all the IDs and passwords from this - I bet you can't!

Incidentally, a very secure password can be achieved by changing it every time you log on. Including some derivative of the date can be useful, provided that you remember to write down the last access date. For instance, I used to log on to CompuServe with the password BOOK2/COVER8 which was changed every time I logged on by changing the digits to the current date so that, on the 3rd of the month, it would be changed to BOOK0/COVER3 and all I needed to note was the date the password was changed.

Finally, NEVER - repeat NEVER - save your IDs or passwords on a disk. It may be very convenient to have an automatic log-on sequence for Prestel, but your account is then only as secure as your disk.

I was recently sent a copy of a comms disk for the Amiga - the owner of which is one of those who is normally extremely careful about passwords and the security of his accounts. However, hidden in one file was a complete set of Prestel, PSS, HomeBanking, Telecom Gold and CompuServe IDs and passwords.

Books, books, books

Now a quick advert. Over the last few years I have acquired a large number of books on computers. Now that I'm starting to clear out the house, aiming towards a move some time in the spring, it's high time I got rid of them.

You'll find more details in the small ads.

Stop press - TRANSACTOR

Just as I was about to mail this article to the Editor (January 13th), there was a knock at the door - it was Richard Evers, the publisher of TRANSACTOR, just arrived off the plane from Toronto. He is over in the UK to tie up the UK publishing details. In his hand he had issue no.1 of the TRANSACTOR for the Amiga, hot off the press and my first impressions are very favourable indeed.

To give you some idea of the content, there are articles on progamming pitfalls, how memory allocation works, machine code for the Amiga, the start of a series on the art and science of debugging, the inside story of the first Amiga operating system (that was never used) and what fonts are all about. Of course, there are news and views and reviews, with very few pages of advertising.

The authors include Jim Butterfield, Betty Clay (who also now writes for ICPUG), Andy Finkel (software manager for Commodore-Amiga), Rob Peck (author of the Amiga's ROM Kernal and the Hardware manuals), and Matt Dillon, John Toebes and Scott Ballantyne (whose names you will see on Fish disks and on commercial software).

This issue is 80 pages of quality detail that you won't find anywhere else, and I strongly recommend a subscription.

Oh, just in case you think that this mini-review is too favourable, let me stress that I have no connections with the magazine at all!

8 AND 16 BIT STUFF

C128

What about an interface with the following features:—

- ★ 32K RAM buffer—32K ROM and multiple printer choices
- ★ Standard serial for the 64 and Fast and Burst serial for the 128. It actually tells the computer to send at burst mode!
- ★ 16 active DIP switches for unequalled flexibility
- ★ RESET and CLEAR buttons with LED to indicate activity and errors
- ★ 2 built-in screen dumps; 16 sizes, 4 shades with inverse, single and double pass and quad density from an 8 or 9 pin printer; 24 pin and the Epson Laser are supported
- ★ 4 built-in fonts with Script, Helvetica, NLQ and Roman, with 4 fonts downloadable to RAM
- ★ Utility disk with more than 40 fonts
- ★ Downloads and dumps direct from disk!!
- ★ 21 secondary addresses and 12 printing channels
- ★ Command channel with more than 35 commands
- ★ Banner channel uses all fonts, 4 new channels for downloading
- ★ All fonts support underline, italics, bold, super/subscript, 9 pitches
- ★ Lifetime warranty

SUPER GRAPHICS GOLD is the name, and it works with the 64, 128, and Plus 4, and is in fact a Computer in itself, with its own power supply. It out-performs all other interfaces, and speeds up the printer during graphic dumps, forcing the 128 into burst mode. Must be the ultimate interface, superior even to its predecessor Super Graphics and it is £119.95

We will do you a deal. Take the award-winning and ultimate W.P./Desktop Publisher **FONTMASTER 128** and **SUPER GRAPHICS GOLD** to get the two for **£129.95 and save £40.00**. That is no misprint but a massive saving.

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Very new and other 128 software is available. Send for details. We offer deals on software when buying the 1581 3½" 800K drive at £199.95; P&P £3.

C64

If someone said to you, "I've got a device that lets me copy a full disk in 11 seconds with a 1541" what would you say? We think the answer would be "Where can I get one?" Look no further. We are bringing in this device from the States where it is just being released. £49.95 is the price for spectacular performance. Interested? Well contact us as we also have a lot of brand new software coming in for the C64 which has never been seen over here.

AMIGA

Not forgotten you chaps. Just talking to A1000 owners at the moment. Would you not like a cheap add-on 2 megabyte memory with a through bus built in? Of course you would, but £500 plus is a bit too much. How would £360 suit? Or rather £310 to ICPUG members? Snap my hand off, they won't come cheaper and you will sure need that extra memory very very soon.

BARCLAYCARD VISA

If we have wet your appetite with these snippets, we have more. Drop us a line.
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---

128 SOFTWARE

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Basic 8 adds over 50 Hi-Res graphic commands to Basic 7.0, and is completely compatible with its advanced non-graphic commands. You work in a true 3-Dimensional environment, controlling such paramaters as perspective, viewing angles and the origin and depth of the view. Many, many more features; available for only £34.95. Detailed information available on request.

1571/1541 Drive Alignment Package

1571/1541 Drive Alignment reports the alignment condition of the disk drive as you perform adjustments. On-screen help is available while the program is running. Includes features for speed adjustment and stop adjustment. Allows you to test each full and half track as you realign the drive. Complete instruction manual on aligning both 1571 and 1541 drives. Even includes instructions on how to load the alignment program when nothing else will load!

Works on the 128, C64, SX64 in 128 mode or 64 mode. Price only £24.95

Super 81 Utilities

Super 81 Utilities is a complete utilities package for the 1581 disk drive and C128 computer. Among the many Super 81 Utilities features are:—

Copy whole disks from 1541 or 1571 format to 1581 partitions. Copy 1541 or 1571 files to 1581 disks. Copy 1581 files to 1571 disks. Backup 1581 disks or files with 1 or 2 1581's. Supplied on both 3½" and 5¼" format. Performs many CP/M and MS-DOS utility functions. Performs numerous DOS functions such as rename a disk, rename a file, scratch or unscratch files, lock or unlock files, create auto-boot and much more!

Super 81 Utilities is a full-featured disk utilities system for the 1581 and C128 for only £29.95

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Are you experiencing any of the following problems:—

- ★ I/O Error 5 when using Superbase?
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- ★ Major problems when 2 or more files open?
- ★ Slow writing to second side of disk?
- ★ Takes for ever to recognize a flippy disk?

If you have one or more of these problems then you need a 1571 FIX ROM, just plug it in! Only £24.95

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New from SOGWAP Software Inc., The Big Blue Reader allows you to transfer files generated on most IBM-compatible (MS-DOS) software to all three modes of the Commodore 128 and vice verca. Thus, files can be transferred to or from MS-DOS, GCR (128 or 64) and CP/M disk formats. The Big Blue Reader requires a 1571 on both the Commodore 128 and 64. The Big Blue Reader is only £29.95.

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EXHIBITIONS

by Janet Bickerstaff

Official Commodore Show - June 1988

The Commodore Show is to be held at the Novotel, Hammersmith, London, from Friday, 3rd June to Sunday, 5th June, with set-up on Thursday, 2nd June. Stand volunteers please note!

The floor plan is at present being drawn up so we don't know where our stand will be this year, but we have already been offered a special discount price for advance ticket bookings for ICPUG members, which will be cheaper than the advance booking facilities offered elsewhere. The advance ticket order form will be circulated with the March/April Newsletter and you will be able to order your own tickets at the special price and tickets for your friends at the ordinary advance rate (unless you can persuade them to become members in time!).

It is hoped we shall have the usual ICPUG Get-together on the evening of Saturday, 4th June, in the Salon Bourg and, if this can be arranged with the organisers, details will be announced in the March/April Newsletter.

11TH PCW Show - September 1988

Please note that the date and venue of the PCW Show have been changed. The date has been brought forward by one week to 14th to 18th September, with set-up on Tuesday, 13th September. The venue is now Earl's Court, which can hold more people than Olympia, and this should ease the over-crowding on the Saturday.

ICPUG South East weekend break at Charmouth

The South East Regional Group are holding another Weekend Break of computers and gourmet food at The Queen's Armes Hotel, Charmouth, Dorset, from 15th to 17th April. At the Autumn Break there were fourteen computers and many peripherals on show and talks and discussions took place all day on the Saturday and on Sunday morning. Anyone interested in attending as a Day Visitor should contact me to reserve a place. There will be a charge of £4.00 per day to cover the cost of the buffet lunch.

***

AMIGA WATCH

by Mike Todd

There are two matters arising from the last Amiga Watch. Firstly, it must have been the drink (honest guv') - but I know that it's Trigger and not Flicker!

Secondly, a small tipographycal eror (sic) actually made a major change to the sense of one of those hidden messages in the Amiga. The message I'm referring to is the one which goes "We made Amiga, then f****d it up" - in fact, it should read "We made Amiga, THEY f****d it up" (sorry about the deleted expletive!). A totally different sentiment, I'm sure you'll agree.

Thanks to Dave Parkinson of Ariadne Software for pointing this out.

Dave is the brain behind the "Kickstart" guide to the Amiga, based very much on the Kickstart journal that he and his colleagues produced in the Amiga's early days. The journal was sponsored by Commodore Electronics, and was initially aimed at developers. However, much of the material was so well written and easy to understand that it was decided to make the material (plus a few extras) available to the interested Amiga user - hence the book.

I would stress that the book is not for the faint-hearted as it delves very deeply into some complex areas of the Amiga, but if you've been confused by the multiplicity of meanings of some Amiga tech-terms or would like to understand something about the internal housekeeping, then it's a very worthwhile buy. I can recommend it!

The price is £12.95 - but take away an ICPUG discount, and add postage and you'll pay about £10 for it. Ariadne are at 273 Kensal Road, London W10 5BD (telephone 01-960-0203)

The latest edition includes some references to the differences between the A1000 and the new A500 and A2000 machines and it is on this subject that Dave Parkinson had the most to say in his letter to me.

You will no doubt recall the comments of varying speed performance between the various machines, well Dave, with the help of Harry Broomhall, has come to a conclusion of why this might be the case. The following is a summary of the arguments.

Chip memory, fast memory, and slow memory!

To understand the problem, one needs an understanding of the philosophy behind the Amiga's RAM organisation.

In order to allow the special video, audio and interface chips (Portia, Agnus and Daphne - or PAD for short) to share memory with the main processor, a special scheme of interlocks is set up to avoid both sides accessing RAM together. It is arranged that these chips and the processor access the RAM alternately - a fine arrangement, unless the PAD chips have a lot of work to do (perhaps when handling a screen with four or five bit planes) in which case the processor may have to wait until the PAD chips are finished with it before being allowed its own access.

However, as a direct function of their design, the PAD chips can only access the first 512k of RAM (i.e. from $00 0000 to $07 FFFF) and this RAM, shared between the processor and the PAD chips is known as CHIP memory.

Normal RAM expansion on the Amiga (which can be up to 8 MByte, from $20 0000 to $9F FFFF) is not accessible to the PAD chips, so that the processor owns it exclusively and access can be much faster.

This RAM is referred to as FAST memory and, under normal circumstances, the Amiga A1000 (whose only expansion capability is in this memory area) will run fast, provided that the software and data are held in FAST RAM, with CHIP RAM being used almost exclusively for screen displays, audio waveform tables and disk buffers.

The A500 and A2000 are slightly different. The A2000 comes with a full 1 MByte of RAM, the A500 is easily (and fairly cheaply) expandable to 1 MByte - but, the additional 512k of RAM does not sit where you'd expect it (i.e. in the normal RAM expansion space) but instead, it occupies the area from $C0 0000 to $C7 FFFF.

This would be fine if this area were treated the same as the normal expansion area - but it isn't. In fact, it is subject to the same logic as the bottom 512k of CHIP RAM - even though the PAD chips cannot get at it! This means that, if the PAD chips are making greater than normal demands on the bottom 512k of RAM, any processor access to this expansion 512k will be slowed down.

Now, under most circumstances, this is unlikely to be noticed since the delays are only those that you'd have experienced with an unexpanded A1000.

So, let's look at two scenarios - the first, an A1000 with 1 MByte of expansion RAM (total RAM is 1.5 MByte), and second an A2000 with the same expansion RAM (giving a total of 2 MByte of RAM).

When the A1000 is turned on, a check is made for expansion RAM and the operating system puts most of its work areas in the expansion RAM (on the grounds that it is better to keep the bottom 512k clear for screens and so on). As a result, the vast majority of processor access is in FAST RAM and the expanded A1000 will run faster (sometimes significantly so) as a result.

With the A2000, the situation is complicated by the existence of the additional 512k of SLOW RAM. When started up, the A2000 does the same as the A1000, and checks for expansion RAM - the first is finds is the 512k of SLOW RAM, which it makes a note of - then it finds the 1 MByte of FAST RAM, and notes that also.

Unfortunately, when it comes to allocating memory for its own workspace, the operating system will "discover" the SLOW RAM first (since it appears in the available memory table first) and will therefore build its workspace there. Similarly, any software which needs memory, will be allocated memory in this area as first choice.

This means that comparisons between an expanded A1000 and an A2000 (or indeed an A500) will generally show that the A2000 is running slower - simply put, the expanded A1000 is operating within an area of RAM that is unaffected by the needs of the PAD chips, whilst the A2000 has been forced to use RAM that is slowed down by the PAD chips as a first choice, even when faster and efficient RAM is available.

Although not an ideal solution, it is possible to force the Amiga to allocate any FAST RAM first - but only once it has booted up, and so has its own workspace in SLOW RAM. This is achieved by running the utility SlowMemLast which makes the dreaded SLOW RAM the last choice when allocating memory - this could be done is a startup-sequence, but should be done before loading any application software.

The result will be that the application will load, run and use FAST RAM as far as possible.

Conserving memory

Although at one time, 512k of RAM seemed a great deal of memory, with the Amiga it is very much equivalent to the 64k of the C64 - there's enough of it for most applications, but it is all too easy to run out with large application programs or complex screen displays.

The Amiga has its own personality, and will happily eat up memory when you're not expecting it and it is useful to know how to cut down on the operating system's voracious appetite.

First of all, and probably the most obvious advice, is to keep the number of applications running under the multi-tasking system down to a minimum. If you've popped into another application program to check something out (perhaps you were word processing, and called up Superbase to check an address) then close this as soon as you're done.

Screens and windows all take up a large amount of RAM and the problems are increased as the number of available colours or resolution is increased. If you've the choice, use two or four colour, low- resolution screens.

Close all unused windows (including those generated after clicking on a disk icon). However, you may want to preserve a couple of program icons, in which case drag these out of the window onto the Workbench screen and then close the window, the icon will stay put.

If you find you can't afford to do without a window then keep it as small as possible. Also, avoid windows overlapping since the operating system will stash away the "damaged" portion of the windows ready to restore it when the window is uncovered.

The same principle applies when using applications like Superbase which open windows of their own - keep these as small as possible. If you find the system won't allow you to resize a window or to drag it, then there's not enough memory to hold the new version - perhaps try small changes at first (to the smallest windows that you have) to free up memory progressively. This doesn't always work, but it may be worth a try.

Finally, some applications programs may remove the Workbench screen completely, generating their own screen - when you slide the screen down, the Workbench screen and the disk icons will have gone. This is another device for saving chunks of memory - however, you may want to keep the Workbench screen to allow access to other packages. In this case, keep a window open on the Workbench screen since the screen cannot be removed whilst there is a window present.

If you really are desparately short of memory, you could unplug the external disk drive before switching on. The operating system will then not allocate any buffer or work area for this device. Of course, it would be a much better plan to save up for some expansion RAM.

Superbase again

I always seem to manage the odd SuperBase Personal comment, so why should this time be any different.

I'm sad that we've still not seen SuperBase Professional yet. I don't know what the problem is, and phone calls to Precision are just met with a very blunt statement that it won't be available until next month. They've been saying that since October. I hope that it will be worth the wait and not be full of little niggly problems.

On the subject of niggly problems, I am very pleased that SuperBase Personal allows you to change the working directory using a pull-down menu option. What impresses me even more is that one could even specify a different device for a file with the OPEN option (for instance, one could pop into a RAM: database whilst staying with a disk database) and it works just fine. This is a feature I use a great deal for data entry - as I've explained on a earlier occasion, I keep a blank copy of the database in RAM: into which I enter my data; then EXPORT this, and IMPORT it back into the disk based database. This saves a great deal of time and frustration.

However, although I can do just about everything with this file, it seems impossible to use some of SuperBases's features with it. For instance, I can't access any of the fields in a requester when the field is a duplicate. The RAM: prefix seems to muck up the logic.

At least I've found one thing I was very pleased with (and not mentioned in the manual). I wanted to have a calculated field which contained the number of days between a date field and the current date. Well, TODAY is a recognised 'variable' name and so the calculated field just had:

```
TODAY - start date
```

Key clicks

Finally, one thing that I find about the Amiga keyboard is that, although it is well designed, it is rather less than positive in its actions. As a result, I would like to know (without looking at the screen) if I've pressed a key.

How about a routine which generates a click every time a key is pressed?

⁂

THE MAN IN THE CAPE

by Betty Clay

Of all the people who are active in supplying the Amiga public domain software in the United States, probably the most interesting one is Leo Schwab. Leo is known as the Man in the Cape, and is famous for his signature on the networks - a picture of a recumbent bike. He is said to ride one of those bikes while wearing a long black cape and extra-dark sunglasses. The information I've found about him also indicates that he is approximately 22 or 23 years old, and has been playing with computers for at least the past ten years. His first computer, he says, was a SOL-20 (or was that 80?)

The software for which Leo is best known includes a number of the demos and display hacks such as Oing! and Robotroff. His latest demo, The Dream Goes Berserk, has quite a story behind it. Perhaps you would like to know about it.

In the field of computer graphics, a company named PIXAR is one of the most outstanding. Their machines are priced in the $50,000-$100,000 range. Each year, they assign a group of programmers to work for several months on a special display to be shown at the SIGGRAPH computer graphics show. These displays are usually about five minutes long, and demonstrate the very best of what is currently available in computer graphics.

This year, a few days before the SIGGRAPH show began, Leo Schwab was invited to attend a preview of PIXAR's offering for that show. Leo was especially impressed by a brief part of the show - a few seconds in which a red unicycle was moving about a circus ring with colored balls bouncing off its pedals and seat - a juggling unicycle, if you will. One of those balls was red and white - like the Amiga ball.

After the showing, Leo went home to his Amiga, picked up his brand new piece of software, Videoscape3D as I recall, and set out to see how much of that short sequence he could reproduce. Two days later, when the show began, he took his rendition of the unicycle to the SIGGRAPH show and showed it to the distributor of the software he had used to produce it. They made a copy and began showing it to other visitors. One of the PIXAR programmers passed by and saw it. Trouble began. No one claimed that Leo's work was as good as PIXAR's, but it was good enough to raise their ire!

PIXAR threatened to sue Leo for copyright infringements. Leo offered apologies, tried to withdraw his demo (but too many copies had escaped), and entered into other negotiations with the company. Leo's friends began to utter highly indignant accusations against PIXAR, and Leo began to feel that his dream of working at PIXAR was lost forever. Amigans felt considerable pride that PIXAR should feel threatened by a demo on a $2000 Amiga.

After several weeks of negotiating, Leo worked out an agreement with PIXAR. He could make one last showing of his demo, and he announced that it would be shown at the FAUG (First Amiga Users' Group) meeting in early September. After the demo was shown, someone from the audience asked Leo when he would have a demo that COULD be distributed. With a quick flip of the cape, he reached into his pocket, withdrew a disk, and showed them the program I recently forwarded to you - THE DREAM GOES BERSERK. I hope you enjoy it.

***

AMIGA VIRUS COMPLAINT

compiled by Pete Miles

The following is a thread from Compuserve.
Hot News & Rumours
WARNING VIRUS LOOSE!!
From: Larry Phillips
To: All

Well, it had to happen sooner or later. There are a variety of programs that are variously known as Trojan Horses, Bombs and Viruses. While Bombs are generally destructive (as evidenced by their name), and Trojan Horse are either destructive or for the purpose of theft or data, Viruses have been known to be benign or malignant or both. A Virus has shown up on the Amiga arriving from Europe and coming from a group that call themselves SCA. Since it is uncertain yet what its purpose is, that is, how destructive it may or may not be, it will pay to check any disks you boot from and kill the Virus if found.

The method of propagation as as follows: an Amiga is booted with an infected disk. All works normally with no sign that anything is wrong. If you then reboot the machine with Ctrl-Amiga-Amiga using an uninfected disk, the virus is tranferred to the boot disk, and it too becomes a 'carrier' ready to pass the virus on and so on and so forth.

The presence of the virus can be detected by looking at block1 on a disk. Normally this will have random data or a pattern of data in it, but you will be able to see the virus quite easily if it is there. Using Sectorama (Diskzap will not do it), look at block 1 (Cyl0. Hd 0, Sector 1). If the virus is present, run install on the disk. Install will rewrite sectors 0 and 1, thus killing the Virus. Then, AND MOST IMPORTANT, TURN OFF THE AMIGA'S POWER. If you have booted from an infected disk and have used INSTALL to kill the virus, rebooting without powering off/on will only re-infect the disk.

There have been a couple of reports of messages showing up on the screen, and one was followed by the disk becoming unusable afterwards, but I can't confirm that it was trashed by the Virus. The message was: Something wonderful has happened. Your Amiga is alive! and, even better, some of your disks are infected by a VIRUS! This is the message that appears in block 1 of an infected disk.

There followed a query pertaining to the above mail.

From: Larry Phillips
To: Barry Massoni

The memory is not only not cleared upon rebooting, but there is a way to allow a program to survive a warm boot (CTRL-Amiga-Amiga). The virus itself is contained in the boot block and when you boot from an infected disk, installs itself in this manner. When you reboot with an UNinfected disk, the virus write itself out to the boot block of that disk infecting it as well.

A cold reboot (power off, power on) will indeed remove it from the memory. The problem is, you must know in advance that the disk you are currently booted from is infected before you think to go through this procedure.

As for looking at the disk to determine if the virus is there, the program to use is Sectorama. Perhaps someone will come up with a program that will detect and kill the Virus giving you a warning at the same time.

End quotes.

Sectorama hasjust arrived so I have not had a chance to look at it properly, however it will be put into the Amiga Library at the earliest opportunity.

STOP PRESS! - 1

From: Pete
To: Bill

Bill, we had a quick commitee meeting in MacDonalds and it appears the A500 and A2000 can carry a virus in the RAM of the battery-backed clock, and can also get at your hard disk. At this stage we don't know how to get rid of it. It seems that various diseases are getting at the Amiga. We are taking advice. Watch this space and be VERY CAREFUL.

STOP PRESS! - 2

Bill, we have just recieved a copy of the latest Amiga Virus Killer, which apparently not only destroys the Virus on disks, but also gets rid of lingering traces in the memory (RAM). It's available to club members NOW!

PERILS OF PORTIA, AGNUS & DAPHNE - 6

by Brian Grainger

If my telephone calls are anything to go by then over the last two months the Amiga virus has turned into an epidemic. Apart from the symptoms, which tend to spread panic when they occur, the effects of the disease seem to vary depending on what you read. My notes last time were very much a first stab and maybe in error on some points. For example it seemed that the problem came from a 'Light Circle' disk. I now believe this not to be the original source. It just happened to be an infected disk when the problem was noticed. Jacob Ellis wrote to tell me that his Amiga got infected by the commercial program 'Barbarian'. He contacted the supplier who confirmed it and rectified the problem. Popular Computing Weekly has also reported a different commercial source of the virus.

The most reasonable sounding explanation I have heard was uploaded to Compunet by The Electric Frog-Plate and came from something called CIX. The virus is located on the boot block (0 and 1) of the infected disk. When booted it stores itself at $7EC00. The next piece of explanation I repeat verbatim as it is a bit technical for me to totally understand!

'The virus alters the CoolCapture pointer in Execbase so that it is called whenever the machine is reset. The change to the CoolCapture vector changes the SendIO function to examine IORequests for those wanting to read the boot block. If such a request is found the new code reads the boot block and checks if it is infected. If not, the virus updates the block with a copy of itself and writes the revised block back to the disk. The virus also keeps a count of how many new disks have been infected. This count is ANDed with $F. If TRUE the virus messages appear.'

The only bit of the above I am not sure if I believe is the last sentence. Other reports say that after 4 boots the messages start to appear. There also seems to be various opinions as to whether having the write protect switch on will protect a disk from the virus. The consensus appears to be that it has no effect. The disk will still catch the virus. The concensus also seems to indicate that the virus does no more harm than print silly messages. However if a commercial disk which uses a special bootup routine (for protection against copying) gets infected then maybe the virus trashes the bootup routine causing the disk to be useless.

As to solving the problem then, as I said last time, an INSTALL command from CLI will do the trick. The 'Electric Frog-Plate' also stated that pressing the left mouse button while resetting the Amiga will re-initialise the CoolCapture vector, which presumably stops infecting other disks booted. It will not, however, remove the virus code from the disk.

As I was telling someone to use INSTALL it struck me that those with single drive systems may find this method is no good. With the infected disk in the drive if you say INSTALL DF0: it will ask for the Workbench to be inserted, unless INSTALL is in the C directory of the infected disk. Having reinserted the Workbench the INSTALL command will be loaded and operate on the Workbench disk rather than the now removed infected disk. Perhaps this is why some virus killer programs exist, some commercially and some in the Public Domain. I am trying to get hold of one.

It is rumoured that the problem is so serious that Commodore in the US have released a virus killer program and this may also be supplied by Commodore UK, perhaps as standard on the Workbench disk. I wonder if this is wise. I have already heard some people blame Commodore for this problem. For once it is NOT their fault. If they feel honour bound to supply a solution then so be it, but I wonder if such recognition will only encourage the morons who wrote the original virus to do something worse which cannot easily be corrected. Perhaps Commodore's honour would be better served in supplied upgrade 1571 ROMs free of charge, something that really was their fault!

Before closing on this subject I should mention that the best way to find out if a disk is infected is to use a disk editor to examine the boot blocks of suspected infected disks. One such editor exists in the Public Domain, DiskZap on ICPUGlib-utility-1.

The rumours mill has been working overtime over the Christmas period. According to Micronet sources a new A500 is scheduled for the Hanover Fair with 1M RAM standard. That makes sense but will upset a lot of A1000 owners, (well a few of us anyway), who cannot easily get the extra memory, and so will increasingly be unable to run programs that come out for the new A500s.

The A2000 is rumoured to be upgraded with:

- 14MHz 68000
- a blitter chip to address 4M of video RAM
- a screen resolution of 1020 by 1024
- maximum number of colours of 256 from a total of 6 million
- A new Daphne chip
- Kickstart 1.3

Again Hanover is suggested as the release time of this A2010.

Speculation has also arisen of a completely new machine the A3000. This seems to be very vague however with one report suggesting a 68020 microprocessor and another a 68030. As with all things Commodore, seeing is believing.

As you have probably realised by now I have not done a lot of new work on the Amiga this time. I will finish by reporting another news item. The Amiga won the West German Home Computer of the year (1987) award. According to Micronet it got 460 points while the Atari 520STFM could only muster up 105.

⁂

NATIONAL PROPOSALS TO HELP REGIONS

It has been agreed at National Committee to help regional clubs financially by giving them a payment for every national member they have and for each issue of their newsletter they produce.

ICPUG will pay regional groups £1 for every national member they have as a paid-up member of their group, and £5 for each news sheet, or £10 for each magazine issue (over 10 pages) they produce for their members.

These proposals will start from the 1st January 1988 and will be reviewed in September 1988.

To obtain this payment The regional group will have to register their members with the Regional Organiser Brian Wise, giving both the members name and address, club number and national club number.

To obtain payment towards newsletters, they should send copies of their newsletter as they are produced and sent out to their members.

Brian Wise

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PET PRATTLE

by Joe Griffin

Introduction

Most of this first article will be taken up with a bit of history, both of Commodore and, by way of an introduction, myself.

My own involvement with Commodore machines started in 1982 when I changed jobs and started work on the production of technical programs running on 8032s. With virtually no backup or expertise in the company, I determined to learn more about these machines.

A visit to the 'PET Show' at Hammersmith in June provided me with a copy of Rae West's 'Programming the PET/CBM' (still my bible) and an application form to join some bunch of users calling themselves IPUG (The Independent Pet Users Group). In July, on a Morris Dancing weekend, I met the Newsletter editor of BASUG (the Apple User Group). Over a pint or seven, we discussed computers and when I asked about user groups, his advice was "join and get involved". Somewhere along the line I did!

Evolution of the PET range

1975 - 65xx family of chips developed by MOS Technology.

1977 - Commodore bring out KIM1 computer. A revolution: the user only needed to add a power supply and a cassette drive and he was in business, programming in hex. Until then computers had been complicated beasts which occupied air conditioned suites.

1978 - PET 2001 announced. A complete unit ready to plug in to a mains supply and go. The machine was programmable in BASIC and set the pattern for many machines to come in that it used a non-standard form of ASCII code (often called PETSCII) in which two complete character sets were available. One set comprised upper and lower case letters while the other, the default, had upper case letters and block graphics symbols. This arrangement has carried right through to the 128. The machine also set the pattern to come with outlets being provided for connection of a second cassette drive, IEEE peripherals and non-intelligent peripherals (via a user port). It was available with 8K of user memory and is most easily recognised as being the only PET/CBM machine with a SMALL keyboard and built-in cassette drive. The Operating

System contained a number of errors (BUGS), some of which were corrected in later versions of the PET. The Operating System of these early PETs is variously described as "OLDROM", "ORIGINALROM" or "BASIC1". These machines power on with the message:

```
 *** COMMODORE BASIC ***
  xxxx BYTES FREE
```

1979 - The 2001-16 and 2001-32,introduced in 1979, were the outcome of the first and most significant revision of the PET. The memory was at the same time expanded to give options of 16K or 32K. A full size GRAPHICS keyboard was fitted leaving no room for a built-in cassette drive. The Operating System was totally revised, becoming what is know as "NEWROM", "UPGRADEROM" or "BASIC2". This removed most of the bugs of "BASIC1". These machines power on with the message:

```
 ### COMMODORE BASIC ###
  xxxxx BYTES FREE
```

At the same time the peripherals which had been promised for so long finally arrived. These were the 2000 series printers and the 2040 disk drive (DOS 1).

In the autumn of 1979, the PET was given a new name, becoming the 3000 series. This appears to have been purely a cosmetic change and the machines are as described above for 2001-16 and -32. The disk drive was also upgraded, becoming the 3040. The new DOS 1.2 had some, but not all, of the bugs removed.

1980 - 4000 Series. In the summer of 1980 COMMODORE introduced a new range of machines, with a further revision of the Operating System, containing built-in DISK COMMANDS. This Operating System is known, from its power-on message as "BASIC4". Two principal sizes of memory were available, 16K and 32K. Like their predecessors, these machines had 40 column screens and GRAPHICS keyboards.

Originally these machines were fitted with 9" screens, but in 1981, following the introduction of the 8032, 12" screens were fitted as standard. These later 4000 series machines are commonly referred to as "FAT-40" machines. These machines power on with the message:

```
 *** COMMODORE BASIC 4.0 ***
  xxxxx BYTES FREE
```

The peripherals were again upgraded, the disk drive became the 4040, running DOS 2.1 which allowed true relative files. The printers were replaced with the 4022, a unit based on the successful Epson MX-70.

8000 Series. Shortly after the introduction of the BASIC4 machines, COMMODORE released their first 80 column machine (the 8032). The PET had finally come of age!

This had a 12" screen and a built-in 'beeper'. It was fitted with a standard 32K of memory and the BUSINESS keyboard (often criticised by those who grew up with the 40 column machines). These machines power up, in lower case, with the message:

```
 *** commodore basic 4.0 ***
  31743 bytes free
```

With the new machine came a further range of peripherals. The 8050, a high density disk drive was introduced with 500 K-bytes of storage on a disk and a 132 column printer (the 8023) also appeared.

It was around this time that a group of workers at Commodore in Japan are alleged to have put together a computer for their children. The machine was designed to plug into a television set and had colour output. There is a rumour that the machine was given BASIC 2, because those were the chips which were lying around the office. I doubt this, because the operating system is not the same BASIC 2 as in the PET, but is a derivative, having different input/output routines and, of course, the colour features. It may be that the only source code available was BASIC 2! Whatever the truth, that machine went on to become the VIC 20 and set the pattern for a range of cheaper home computers leading to the C-64. It was their concentration on the expanding home computer market which led, in my opinion, to Commodore's loss of their lead in the business market.

In 1981 came the first of a number of variants on the 8032; a machine, known as the 8096, having an additional 64K of memory, not directly accessible from BASIC. A further variant, introduced at the same time, was the 9000 (micro main-frame) with both 6502 and 6809 processors. This supported a number of other languages, including FORTRAN.

At the start of 1983 Commodore announced three new ranges of machines (64, 500 and 700). I attended a 'Commodore Show' hosted by my dealer and my notes reveal that the 500 and 700 machines were not actually on display. At the time I described the machines as follows:

Commodore 64 - This machine is the cheapest of the new CBM machines. It is an extension of the popular VIC machine and is aimed at the advanced hobbyist.

Commodore 500 - The 500 series is described by CBM as the "Professional/Scientific" computer. The machine features a 40 column colour display, although as with the 64, no screen is provided with the basic machine.

Commodore 700 - This series of machine is described by CBM as the "Business" computer. The machines in this range cater for an 80 column monochrome screen, which can either be supplied with the machine, or in the form of a separate monitor.The machine can run most of the software which is available for our 8032/8096 machines, although some of the more advanced techniques (such as screen addressing) may not work without modification. The 700 series will have BASIC as their standard language but will be able to accept PASCAL, FORTH, LOGO and other "soft-loaded" languages. Additionally, both the 500 and 700 series machines can accept a "second processor" option of either a Z-80 or 8080 microprocessor. These will allow the machine to run under either of the "Industry Standard" systems of CP/M or MS-DOS, allowing a vast range of programs to be used.

Of these machines, the 64 has, of course, been an incredible success; the 500 was still-born and the 700 was re-launched at least twice, before being finally ditched in favour of a revamped version of the 8000 series.

In America, the 700 (or B) series is currently enjoying far greater support than it ever did when it was available. Commodore gave away most of the rights of the Bs to the Chicago B128 Users Group (CBUG) who have taken 'the orphan' to their breast and a truly incredible amount of development work has been carried out by their members.

A 1 M-byte expansion is available and the 8088 Second processor which never appeared for sale has been rescued from the depths of Commodore's research labs and CP/M is now available for the 'B'.

On the software front, having been given a release by CBM to obtain all material for the 'B', their people have managed to set up some good deals with the software houses. Superoffice is available with Superbase V2! Oh, Precision, how we would love that for the 8096. Precision have also produced Superscript 3 for the 'B'. Version 3 is the menu driven one seen on the 64 and 128.

JCL's 700 workshop is available under licence to CBUG members for about $30, and the Petspeed compiler (my favourite) is available for $99.

CBUG have also obtained a lot of original Commodore documentation (much of it rescued in the nick of time as Corby was closing) including the 8080 schematics & CP/M info (40pp), software dev't info (302pp) and the original Programmers Reference (798pp).

Although ICPUG has a reciprocal publishing agreement with CBUG, I would suggest that any ICPUG member who is interested in serious computing on a 700 should join CBUG; the cost is $21 for surface mail or $35 for air mail (payable in US funds to):

CBUG Inc.,
c/o Norman Deltzke,
4102 N. Odell,
Norridge,
Illinois,
U.S.A.

And, after that commercial, back to the plot.

At the time the 700 was announced, the final floppy disk variant, the double sided 8250 was introduced, giving 1 megabyte of storage on standard 5.25 floppies.

In Jan '83 the 8000 series was given a facelift by adoption of the Porsche designed casing of the 700. Popular rumour at the time suggested that the suffix "-SK" did in fact stand for "Smoove Kase"!

Although the new packaging made a few differences to the connections - edge connectors were replaced with IEEE 'D' connectors, the Operating System was the same as on earlier 8000 series machines.

Over the next two years Commodore produced a few more variants of the 8000. The 8296 featured 96K of additional RAM. At the time Tom Cranstoun was reported as saying that 32K of this could only be got at by the user opening the machine and changing the links. The final versions of the 8296 were the 8296D with a built in 8250 drive and the 8296GD with a high resolution graphics board and drive. The operating system was still BASIC 4.

In 1986 Commodore finally dropped the 8296 and the 'PET' range ended.

Identification of hardware!

At each introduction of a new machine CBM have provided the users with the chance to upgrade their machines and third parties like Mick Bignall and Supersoft have been in the fore with conversions. Thus the label on the front of the machine may have little bearing on what lies within. Tom Cranstoun has what appears from its labels to be a 2032, large keyboard machine (or is it a 2016!). When switched on, the 9" screen powers up in lower case with the BASIC 4 legend. Even then, the fact that the machine is an 8096 is hidden.

Switching on a 'PET' will reveal what operating system lurks within. I will delve into 8096/8296 memory expansions in a later article. For those with BASIC 2 machines, an upgrade to BASIC 4 (while still maintaining the option to switch to BASIC 2) is available from Supersoft. This board, 'The BASIC 2+4' normally sells for £65+VAT. Until the end of April, it is available to ICPUG members for £49+VAT. The upgrade to BASIC 4 is well worthwhile for the improvements to the operating system (better string handling and disk commands). Supersoft are at:

Winchester House,
Canning Road,
Wealdstone,
HARROW,
Middlesex
HA3 7SJ
(Tel 01-861-1166) Contact Peter Calver.

Disk drives may be harder to identify. One method which sorts most out is to format a disk in the drive:

`OPEN 1,8,15:PRINT#1,"N0:TEST DISK,TD":CLOSE 1` works with all drives.
Follow this with `LOAD "$0",8` then `LIST` to see the disk directory.
The number of blocks free will tell you the drive type:

```
 670 blocks  - 2040 or 3040
 664 blocks  - 4040
2052 blocks  - 8050
4133 blocks  - 8250
```

The 'single density' drive x040 cannot be upgraded to double density 8050 standard but an upgrade (again from Supersoft) will convert the 2040 or 3040 into a 4040. The normal price is £55+VAT but again until the end of April, ICPUG members may obtain it for £39+VAT. In addition to providing Relative files, the upgrade removes a number of bugs and gives automatic recognition of the disk without the need for 'initialisation'.

My final advice to all PET owners is to follow my example of 1982; buy Rae West's book. 'Programming the PET/CBM' West is published by Level Ltd. It is available from:

Biblios Publishers Distribution Ltd.,
Star Road,
Partridge Green,
HORSHAM,
West Sussex.
RH13 8LD

Price £18.90 + £1.00 p&p - expensive but worth it! Next time I will delve into the mysteries of using non-Commodore printers with the PET.

⁂

ICPUG SOUTH EAST GROUP

COMPUTERS & GOURMET FOOD AT THE QUEEN'S ARMES

by Janet Bickerstaff

One of our commitee members, Pete Miles, has a very comfortable hotel at Charmouth, Dorset, and whilst staying there during the summer we thought it would be an excellent idea to hold a weekend "get-together" for the Group and the title of 'Computers plus Gourmet Food' seemed appropriate.

This event took place in October and was an outstanding success – in fact a similar event planned for April is almost completely booked. Around twenty members travelled down on the Friday afternoon/evening, and although some had problems with the weather and breakdowns, they were soon revived after an excellent meal and suitable refreshments at the bar.

Following dinner, part of the dining-room was re-arranged to allow for a line-up of Commodore computers against one wall. Everyone had brought their own machines and there were Amiga 1000s, 128s, a Pet and an Amiga with a Roland X-Y plotter, video camera and Genlock.

After being fortified with a full breakfast the following morning (known as 'The Works'), the dining-room was transformed into the Charmouth Commodore Show. Even more computers and peripherals were produced. John Bickerstaff had brought his Amiga 2000, and Simon Tranmer had his developer's Amiga 1000 and, dare we say, an IBM PC special, with his own stereo equipment.

At 10 a.m the visitors began to arrive. ICPUG National members from the surrounding area had been invited to attend on Saturday and Sunday and soon introduced themselves and made friends. They were quite impressed by what they saw and were pleased to have the chance to see the latest equipment being used by experts.

John Bickerstaff, Chairman of the South East Group, welcomed everyone in, and Simon Tranmer started the morning session with a talk about word processing and databases. He also gave a progress report on Superbase Professional – three or four of the beta-testers were there.

Pete Miles' wife, Jenny, produced a marvellous cold buffet at lunch time which everyone enjoyed, and of course the bar was open, although were was no serious drinking as a clear head was needed for the afternoon session.

Jim Kennedy took over with a demonstration of the LaserJet Plus printer, kindly loaned to the National Group by Hewlett Packard for the production of the Newsletter, followed by a demonstration of his Superdesk program. On Saturday evening we all sat down to a sumptuous meal, the computers having temporarily been put to one side, and the day's events were discussed over coffee and liqueurs. The wives, in the meantime, had also enjoyed themselves. They discovered the beach and took a healthy walk along the cliffs towards Golden Gap. After lunch they explored the pretty little town of Lyme Regis, walked out on the harbour wall, known as The Cobb, and had a welcome cup of tea in the town.

Sunday morning saw some members out for a walk before breakfast (well, they had to say they'd seen the sea!) There was one, however, who rose early to write a program to make his Pet emulate an Amiga Guru. The others had all got the dreaded Guru message at some time, so he didn't want to be left out.

One of the topics for Sunday was the transfer of files between Commodore machines. Various methods were discussed and experiments tried. Tom Cranstoun and Joe Griffin successfully demonstrated transfers between a Pet and a 128, and Brian Fowler transferred data from a PC compatible to an Amiga 1000. Amongst other useful practical demonstrations, Tim Arnot showed how a 1901 monitor could be modified to work with an Amiga.

The peace of Sunday afternoon was shattered for the neighbourhood by David Annal and Simon Tranmer giving a demonstration on Amigas and synthesizers using the Midi system. A powerful array was rigged up and the session finished with a deafening version of Ravel's Bolero which seemed to fill the entire hotel.

Altogether the weekend was a great success, everyone gained in knowledge (and weight, thanks to the super food) and several letters of thanks were received from local Commodore users who came along.

SUPER* CORNER

edited by Peter Hauke

And so the New Year brings a new editor to the Super* Corner. For those of you new to ICPUG, Super* Corner is a regular ICPUG column about the database and wordprocessor programs produced by Precision Software. These include: Superbase 64, Easyscript, Superscript 128, Superbase 128, Superoffice 8096 (Superbase and Superscript on one disk) and any other "Super" programs produced by Precision.

A short history lesson? I can still remember back to the days when I first purchased a Commodore 64 and Superbase and sat in front of a small portable telly designing my first database. Eventually I discovered ICPUG. Bits of advice gleaned from those first ICPUG magazines set me on the correct road. Seeing programs written by others made me look at my own with a different critical eye. New techniques were incorporated. Better presentation. Easier to use programs were the result. Several years and several machines later (C64 to 8296 to C128 and almost to Amiga but not quite) I now find myself editor of the Super* Corner and hopefully in a position to help others in a similar manner.

But first my address. Do not hesitate to contact me by writing on any query regarding a Super* program:

Peter Hauke
1 Montpelier Road
Ealing
LONDON
W5 2QS

A stamp addressed envelope will always elicit a prompt reply. Superbase articles should be sent to me. Please, always send a disk with the article on it and preferably a working demo of the program if relevant. A printout of both the article and any programs would also be appreciated. And please do send in your queries and tips. If you have a problem, chances are that somebody else has already solved it. And if you have solved one, then chances are that somebody else still has the problem.

You may notice at the end the new title Superlink. Superlink is simply the term I shall use for switching between Superbase and Superscript when both are resident in memory. But enough rambling, let's get started...

Superbase

Firstly, there are a couple of small errors in the programs written for the Superbase Multi-Key Access article in the last ICPUG magazine. These resulted from my omission to replace double quotes with two single quotes — apologies to Bill Bremner for the extra work. To move on, line 2 of the first program has the fourth double quote after the 's' whereas it should be before reading "surname"s$. Line 10 of the second program should have double quotes around like so, "select-record".

At present there are no outstanding Superbase queries (indeed any Super* queries at all) so let's start off with a few short programs and techniques to improve the presentation and ease of use of Superbase databases.

Firstly always try to dedicate a disk to each database (together with a backup disk or two). I rarely if ever have more than one database on a disk. When designing a file format for a database file I always bear in mind the amount of memory a record will take up. Look up in the appendix of your Superbase manual and calculate how many bytes the maximum record will take up. Superbase does not store trailing spaces. For instance, in an address field of up to 20 characters, Superbase only uses 7 bytes for the field if you entered LONDON (6 for London and 1 for the field separator). Furthermore, if the maximum record size is 140 bytes, including separators, but the average size is about 105, then most records will be below the 123 limit for one half-block per record. If not, then you may want to consider a different approach to your file format design should you want to maximise the number of records.

I always include a start.p program on every data disk and I always keep all my programs on the same disk as the database itself. But what to include in the start.p program? Very little as you can see from the following program:

```
  1 goto 10
  2 save "start":menu
 10 rem
100 date "00JAN00"
200 database "youthclub"
300 load "menu"
```

Either on the command line or in prog mode, simply type run 2 and the program will automatically be saved to disk. Line 100 simply sets the date format for Superbase to English format. date "JAN0000" would set the date format to American. Line 300 loads a program on the disk called menu which is a loader program for all the programs written for that database. As you can see the program is very simple. This makes it easy to follow, easy to debug and easy to tailor to another application. Short programs are easy programs. It is useful to include the system parameters in the start program. The appendix to the Superbase manual has an explanation of how to set the margins, paper lengths, etc.

Note that line 10 is always a rem. I include these first three lines in any program I write. If it were a program line then it might be deleted by mistake and then crash the next time it was used. And so for the menu program:

```
  1 goto 10
  2 save "menu":menu
 10 rem
100 display @0chr$(147)
110 display @10, 7@+"0"" Superbase Menu"
120 display @10, 9@+"1"" Enter Record"
130 display @10,11@+"2"" Select Record"
140 display @10,13@+"3"" Sort Records"
150 display @10,15@+"4"" Print Records"
200 wait wt$
300 if wt$="0"then menu
310 if wt$="1"then load "enter-record"
320 if wt$="2"then load "select-record"
330 if wt$="3"then load "sort-record"
340 if wt$="4"then load "print-record"
400 goto 200
```

A very simple program to do a very important job. CHR$(147) is the code for clearing the screen. The program is self explanatory. It can easily be tailored to use the function keys instead of numbers (check the back of your Commodore manual for the character codes) but this program should run on any Superbase system with no alterations necessary. It is always best to write programs which are understandable and if possible keep them as short as possible. When you come back to the program several months later it helps if you can follow the program easily.

After selecting an option the program loads in the next program (this is called chaining) and runs it. When exiting from the second program back to the menu program, you should include LOAD"menu" in place of MENU. but be careful, when developing a program, always leave the line as MENU and only change it when the program has been fully debugged and saved to disk. I have lost many a good program by testing a chained program and then returning to the menu program without first saving the tested program!

Superscript

In general, a wordprocessor is a wordprocessor is a wordprocessor (amazing what one can do with block repeat - seriously though I did actually type that all out!). Many people who use one, whichever wordprocessor, tend to learn a few types of command and cling to these like a drowning man clings to a piece of wood. I do the same. I used to curse Precision (silently of course) for not including a command in Superscript 128 to split a line in two. Useful for when you want to re-organise paragraphs. It was annoying block moving whole sentences. And then I re-read the manual - the whole manual - from cover to cover, and in the process discovered commands and techniques that I had not even been aware existed let alone used.

There are a number of Control key commands. These are activated by pressing the Control key down and another key at the same time (to be certain press the Control key before the other key). For example, Control-E skips forward a word through your text and Control-W skips back a word. Control-N splits a line in two at the cursor position. Slap my wrists and on we go. Control-D deletes the next word or closes up the gap if there are a lot of unsightly spaces inbetween. All this and more can be found on pages R-11 onwards in the Superscript 128 manual. The moral of the story is, of course, to read the manual at regular intervals.

A major problem that many people seem to have is naming disk files. Indeed this is a major headache for me as well. There are a number of different methods: including the date of creation is always useful. The system I have recently adopted includes four bits of information as follows:

```
  l.robert.14jan.1            a.superc.14jan.1
```

The first character ('l') indicates that the file is a letter. The dots are all separators. The next six characters indicate to whom the letter was written and the next five are obviously the date. The last number indicates the version number. This is useful for large documents where you don't really want to overwrite all the previous drafts that you had prepared.

If it was an article then the first letter would be an 'a'. Superbase program files saved to disk as ASCII files are prefixed with a 'p'. The list goes on. The year can be incorporated into the filename quite easily if you wanted to. It is actually easier to look down a list and identify the exact file you want when everything is the same length and in the same format. But the real beauty of this form of coding is that it is easy to display a list of only letters or articles to the screen. Simply enter (F1 d u o $a* RETURN) at the keyboard. All the files beginning with 'a' will appear on screen. In other words all the articles written. Easy! People who use Superscript for invoicing and statements can prefix invoices with an 'i' and statements with an 's' and the list is endless.

I cannot praise the macro facility on Superscript highly enough. In the past I have read about applications which people have written using the macro facility with great interest. The beauty of macros is that you can program any series of keystrokes to be replaced by two (namely STOP or ESC followed by any key). Macros, or command strings as Precision call them, are explained on page M-25 of the Superscript 128 manual.

What I should like to do is collate a list of useful command strings which hopefully will be published en masse at a later date. The more useful ones would receive special attention in this column. So if you've got a few useful command strings, write in and let me know. To kick off, here's one set of strings that I find useful. When writing long articles, it is sometimes useful to be able to view the current page immediately without having to go through the others. Although F6 will display the last page viewed, there is a more convenient method. Program the number keys from 1 to 9 with the following: /pfv1^m, /pfv2^m, /pfv3^m etc. Now to see page 3, simply press the STOP key followed by 3 and page 3 will appear on the screen (no pretty girls I'm afraid though!). ^ is the uparrow next to the restore key and is used by Superscript to mean that the Control key is pressed.

Another tip which some may find useful is Control-Q. Control-Q effectively does the job of the STOP key. For instance, after keying (F1 d s d) to get the statistical analysis of your document, you can abort the listing of all the words by pressing Control-Q. This is quite clearly written in the manual, but I certainly overlooked it.

Superlink

And now for the new sub-column in the Super* Corner, dedicated to all those who have both Superbase and Superscript or Superoffice on the 8000 series. Using the script command in Superoffice or the superscript command in Superbase 128 you can transfer from Superbase to the wordprocessor. But that is by no means all that you can do. By adding a string you can send command or text strings to the wordprocessor, in fact anything that could be typed at the keyboard. The general format of the command with examples is given in the relevant manuals, but it is not the format which is important but the application. Because script and superscript are Superbase commands, you can include them into your programs in order to design a complete integrated package. You can quite easily design a program which will control the wordprocessor. Study the following Superbase 128 program:

```
  1 goto 10
  2 save "wpfilecreate":menu
 10 rem
100 ask "today's date"dt$
110 dt$=right$("0"+dt$,7):date dt$,n:if n=0then 100
200 ask "wordprocessor file name (max 6 chars)"f1$
210 f1$=left$(f1$+"......",6)
300 ask "wordprocessor file type (a or 1)"ft$
310 if ft$<>"a"and ft$<>"1"then 300
400 wp$=ft$+"."+f1$+"."+left$(dt$,5)+".1"
500 superscript "./eap/dn"+wp$+"^mEMPTY FILE/df^m/qy"
600 ask &1"y to create another file"q$
610 if q$="y"then 200
700 menu
```

The reason for the initial dot becomes clear when you omit it and the superscript text area is already empty. The / is taken by Superscript to mean the F1 key and ^ means Control. So ^m is taken to mean RETURN. Line 500 is translated as: print a dot to the text area / erase all of the text area / set the file name to wp$ / print the words EMPTY FILE to the text area / file the document to disk / return to Superbase. The rest of the program is straightforward, but do notice the neat trick in line 110 to ensure that a zero is added to date strings such as '6jan88'.

Notice that you can send strings of information to Superscript as well as direct commands. The program itself is not very useful. You can use it to create a whole lot of files on disk which can then be loaded by pressing F2 (F1 shifted).

And here's a small item taken from an information sheet from Precision. The end of text in a Superscript file is always marked by a null value $00. Seemingly inocuous but vitally important if you want to use Superscript 128 to prepare files to send via Electronic Mail. Superscript 128 stores all sorts of data after the end of a text file, such as horizontal tabs, vertical tabs etc. The following program detects the end of text for you.

```
100 dopen#1,"xyz.supers.file"
200 get#1,a$
210 if a$="" then close 1:end
220 print a$;
230 goto 200
```

BETTER PRINTOUTS FROM DPAINT

by Betty Clay

In the last two Newsletters, I have seen comments about the poor quality of printouts from DPAINT and DPAINT II. This has been a matter of considerable concern on this side of the Atlantic, also. Several magazines have addressed the problem, and I shall try to summarize some of their findings for you. Perhaps they will be of help.

There seems to be an agreement that the problem is largely due to the difference in the aspect ratio of the screen and that of the printer. Since these are not quite the same, Dpaint and the printer try to accomodate by adding or subtracting pixels to make the closest match they can manage. This led to the conclusion that if one could manage a real one-to-one correlation between screen pixels and printer pixels, the problem would disappear.

Preferences info

First, it is necessary to know how many pixels your printer can print, both horizontally and vertically. Your printer manual may (or may not) tell you this. In general, most printers print pica and elite (10 pitch and 12 pitch) characters in a nine-pixel wide matrix, and finer type in an eight-pixel wide matrix. This is true of the Epson printers, but my Gemini manual says that the standard matrix is nine pixels high (with the lowest pin not used) by eleven pixels wide. In bit-image mode, the Gemini offers a choice of 60, 72, 80, 90, 120, or 240 pixels per inch wide. Thus, for the Epson, the maximum pixels per line across is 120, but for the Gemini, it is 240. In both cases, the maximum pixels per inch vertically is 72.

Since optimum output demands that the screen pixels and printer pixels have one-to-one correspondence, the page width of the DPAINT image must be evenly divisible by the maximum width of a line - 120 or 240 in these cases. This is not offered! The vertical size in pixels must be divisible by 72. This is also not offered.

Here are the suggestions that have provided the best output for me:

(1) Set the preferences setting for 10-pitch, and place the margins as 1 and 70 (7 inches wide x 10 characters per inch).
(2) Set the lines per inch at 6.
(3) Set the paper length at 6 x the number of inches you wish to print.

Dpaint info

From within Dpaint, choose Set Page Size. This offers to let you type in your own page size, or to select three pre-set sizes. None of the pre-set sizes have the correct ratio, so you must type in your own. First type the width, taking the number of inches wide your graphic will be x the maximum resolution per inch. For a 5 inch graphic at 120 maximum pixels per inch, you would type 600 into the Width: blank. Press RETURN, else your number will be ignored! Then, to calculate the height, multiply the number of inches high by 72 pixels per inch, and type the product into the Height: blank - and press RETURN. You will not be allowed to type a number less than 320 for the width and 200 for the height, however. (If you import or load a new image into DPAINT, it will bring along the page size it had before, and you may have to reset this requester after each load.)

Next, you must choose the PRINT requester. Set the left margin at one, to make the other calculations easier. For the right margin, divide the number of screen pixels by printer pixels per inch, and then multiply by 10. For the paper height, divide the number of screen pixels deep by 12. Then set the percents at 100% wide and 100% high. ALWAYS remember to press RETURN after each number you type.

So, here are the suggestions. They have helped me, but I still do not get perfect print. Admittedly, my Gemini printer driver is not as good as it should be. But the printouts are now usable, and before they were not.

Assuming that your printer has a maximum resolution of 120 dpi, suggested widths for printing would be:

360, 480, 600, 720, 840, or 960

and assuming that you have your preferences set for six lines per inch, suggested vertical or height settings would be:

216 for 3 inches, 288 for four inches, 380 for five inches, 792 for 11 inches.

Another interesting thing about these figures - you can double the size of your printer image by cutting the resolution in half - that is, use 60 dpi wide and 36 dpi high and use the same algorithms. It does not seem to affect the quality of the output. I have not found it satisfactory to do the opposite, that is, to cut the size in half by doubling the resolution.

⁂

THE AMIGA WORKBENCH DIRECTORIES

by Mike Todd

On the Amiga Workbench disk there are several cryptically named directories, and in them there are files whose function is not always clear.

For the most part, their purpose doesn't really matter, just as long as they're there on the disk. However, if you're trying to put together a working disk with a minimum of unnecessary material, then it's important to know what you can and can't do without. This applies especially when working with a single disk system, where disk-space is at a premium.

The following is a guided tour of these Workbench directories and should be a useful guide as what can and cannot be removed in the interests of efficiency.

It goes without saying that you should only remove files from a copy of the Workbench disk!

Before going into the directories in some detail, it is important to understand the concept of logical assignments.

The Amiga uses a series of assignments, or logical names, to identify devices or directories from which to read data, or to which to send data. Such logical names can always be identified by the fact that they end in a colon. The Amiga uses three types of logical assignment - devices, volumes and directories.

The devices are the various hardware devices; you'll probably be familiar already with DF0: and DF1:, being the internal and external floppy drives, but there is also PRT: (the printer device), SER: and PAR: (the serial and parallel ports) and RAM:. There are three other devices which are not hardware in the true sense, but nevertheless are used by advanced users - these are CON: (the console device, which normally includes screen and keyboard within a window like the CLI itself), RAW: (similar to CON: but with limited interception and conversion of keystrokes) and finally NIL: (somewhere to send data that you don't want to keep!).

Volume names are the names you give to individual disks when you first format them. For instance, my SuperBase disk actually has the volume name SuperBaseBoot: and it's possible to get a directory of this disk by specifying the volume name:

```
DIR SuperBaseBoot:
```

If that particular disk isn't in any drive, then the Amiga will prompt for that particular volume to be inserted.

Logical directories allow the Amiga to assign names to directories or disks. For instance, when you boot up with Workbench, the Amiga automatically assigns the logical name SYS: to that particular disk. In practice, logical names can be assigned to any directory on the disk - it is even possible to assign a logical name to a single file on the disk; for instance, by assigning the logical name D: to the program DiskCopy in the system directory on drive DF0: by using the command:

```
assign D: DF0:system/DiskCopy
```

Thereafter, simply typing D: will have the same effect as typing DF0:system/diskcopy.

As well as setting up SYS:, the operating system automatically looks for and assigns several other important logical names. These are L: S: C: FONTS: DEVS: and LIBS: which will normally be assigned to the l, s, c, fonts, devs and libs directories on the boot disk.

This method of working may appear complicated but brings a significant advantage. For instance, whenever the system wants a font, it can access the FONTS: directory which could have been re-assigned to another device (perhaps DF1: or a hard disk), and so the system will look there.

There are a total of seven directories that the Amiga may need to do its work. However, what they contain and whether or not they or their contents are essential is at the heart of deciding what can and can't be removed.

One of the things that must be remembered is that the Amiga works much like a "real" computer (rather than the C64 style, personal computers with everything, including a command interpreter, built in) - it only holds as much of the operating system as it can and will go to the disk for anything else it needs.

This may be commands typed at the input prompt in the CLI, library routines called for by applications programs, program overlays needed by the operatings system but not included in the 256k of KICKSTART software, software to drive specialist devices (incuding printer- specific routines) and even the shape of characters on the screen.

C: The c directory contains the commands that you might type at the CLI prompt or which may be contained in any command sequence file, including the startup-sequence. Deciding what to delete from the c directory is quite a tough task as a great deal depends on what you intend to do with the disk - if you only ever intend to use the Workbench environment with that disk, you can delete nearly all the commands, but more of that in a moment. However, always remember that it is very easy to pop a complete Workbench disk in either drive and execute the command by typing:

```
df0:c/command   or   df1:c/command
```

My own first move is always to remove the two text editors, Ed and Edit, since these take up 82 blocks (or nearly 42000 bytes).

Next, check through for those esoteric commands that you're never likely to use on a regular basis. For my own use, I'm happy to do without the following:

```
AddBuffers   Break        ChangeTaskPri
DiskChange   DiskDoctor   FileNote
Install      Join         Mount
Prompt       Protect      Search
SetDate      Sort         Status
Version      Wait
```

Clearly, if you use any of these on a regular basis, you wouldn't delete them. This releases another 77 blocks (39000 or so bytes), yet leaves the main disk utility and important system commands. Even these can be got rid of if you don't mind doing without them.

If you delete the execute command, then you can also get rid of the following commands (bear in mind the proviso below about the bare minimum of commands), since they are used only from within a command sequence file and will save you a further 34 blocks, or about 17000 bytes:

```
Else    EndIf     FailAt
If      Lab       Skip
Quit    Execute
```

Of the commands that are left, you must make up your own mind on what you need, but there is a minimum of commands that must be included: the commands that your startup-sequence will use.

As far as Workbench 1.2 is concerned, the normal startup-sequence must have the following commands available:

Echo If EndIf
Path BindDrivers LoadWb
EndCli

Of course, if you've modified your startup-sequence to include additional commands, then clearly these must still be available. Whether you're in the CLI or WorkBench environment, the system will not need any other commands in the c directory but, be warned that some applications software may demand the presence of some of the commands.

L: Normally assigned to the boot-up l directory which contains system overlay routines. They are not normally accessed by the system unless they're needed, and then once loaded will not normally be accessed again.

Disk-Validator is normally accessed at boot-up and contains the routines that do the validation of disks. A disk cannot be written to without being validated, so this file important.

Port-Handler looks after the serial and parallel ports, and is also essential for most applications. It is loaded on the first attempt to access either the serial or parallel ports.

Ram-Handler is only ever loaded when access to the RAM: device is made. Like others in the l directory, it normally stays in the computer until the machine is reset.

As you can see, the l directory contains some very important routines, and should normally not be deleted. In any case, the space taken up by these routines is fairly small (a total of 23 blocks, or about 17000 bytes).

S: This directory holds command sequence, or batch, files which will be used with the execute command. In fact execute always assumes that its command file is in the S: directory unless you explicitly specify some other directory. Normally, the only command file that would be used is startup-sequence, which the Amiga executes on startup, and this file shouldn't be deleted unless you want to end up in the CLI with nothing else done for you.

LIBS:

Here are stored the Amiga's run-time libraries. These are libraries used by applications programs and the Amiga operating system for functions that are not contained within the KICKSTART libraries. A program invokes these libraries by issuing an OpenLibrary call to the operating system, and this then looks in the L: directory for the specified library.

It's quite difficult to determine which of these libraries can or cannot be removed as a great deal depends on which applications software you intend to run.

Workbench normally requires a minimum of only icon.library, however if you access Workbench functions then you'll need info.library for the info menu option, and version.library for the version option.

The other .library files are translator.library, used to translate text to speech, mathtrans.library containing the trascendental math functions (SINE, COSINE etc.), mathieeedoubbas.library which contains some double precision math routines and diskfont.library which allows access to various fonts held on disk.

In general, I woudln't touch any of the files in this directory, simply because their use may be a little unpredictable.

FONTS:

Here the Amiga stores all the additional fonts that may be used by such programs as the notepad or even DeluxePaint. The system itself has two built in fonts, topaz-8 and topaz-9. The 8 and 9 indicate the height of the font in pixels. Accessing any other font will require access to the FONTS: directory.

Inside FONTS:, life gets a little complicated. For each font, there is a directory and a file. For instance, the ruby font has a file ruby.font and a directory called ruby.

Ruby.font contains some very basic information about which different sizes of the font are available. The ruby directory contains the font definitions, simply specified as the font size. Ruby contains three different sizes - 8, 12 and 15 pixels high.

As far as ruby font is concerned, the relevant files are:

FONTS:ruby.font	specifies the font sizes available
FONTS:ruby/8	the definition of the 8 pixel font
FONTS:ruby/12	the definition of the 12 pixel font

FONTS:ruby/15 the definition of the 15 pixel font

You can delete as many fonts as you like but be warned that, as long as the .font file exists, the system will think that the original fonts still exist. For instance, if you chose to delete ruby/12 and ruby/15, but left ruby/8 and ruby.fonts, the system would still think that /12 and /15 existed and would list them in a fonts menu (such as in notepad) even though it could never load them.

The font definitions use between 3000 and 7000 bytes each, so the savings are only small unless a wholesale deletion of the full fonts set is performed.

DEVS:

This is probably the most complex of directories, and contains all the various device related files.

The DEVS: directory contains all the major device drivers. These are the programs (working in much the same way as the .library files in LIBS:) which allow the Amiga to communicate with the various devices, such as the parallel and serial ports, the printer, the narrator (i.e. the speech synthesis facility) and the clipboard (a filing facility which allows programs to store sections of text, images and so on in a dedicated disk area which other programs can then access).

I would certainly not consider removing any of these files as many programs make direct use of them.

In addition to the .device files, there are two other files. Mountlist is a file containing information about additional devices which may need to be connected to the Amiga, such as a 5 inch disk drive. Unless you use the Mount command (which may be in your startup-sequence), and have the appropriate device handlers included in the L: directory, then you can get rid of this file.

System-configuration holds the parameters set up by Preferences, and without it the Amiga will boot up with default settings for everything (i.e. 60 characters per line, the original colour scheme and slow key repeat rate).

Also in DEVS:, there are normally two directories, although you may find that a third, clipboards, may not exist on your disk if it hasn't been needed so far.

The two directories are printers, which holds the files which drive the various printers, and keymaps, which holds the files used to redefine the keyboard using the SetMap program.

These directories can be trimmed down quite effectively since one usually only needs a maximum of two printers drivers (your own printer and the generic driver) and none of the keymaps.

As well as these assigned directories, the system directory can be examined for unnecessary files. You should certainly hold on to Format and DiskCopy since Workbench uses these to perform the initialise function and disk copying. In addition, it's porobably worth hanging on to CLI. All the others can go, together with their .info files.

Incidentally, whenever you delete a file which has an .info file (for instance the Clock file also has Clock.info) then you can delete the .info file as well - however, it is the .info file which holds the icon information for a file and deleting it will prevent that file appearing on the Workbench screen.

You may also find directories on the Workbench disk that do not have logical assignments - for instance, you may find a t directory. This is designed to hold temporary files and, since those programs which use it will normally delete any files that they put here, it is usually empty. As an example, the Execute command uses this directory to build a command sequence file when arguments are passed to it and substituted within the command sequence.

Finally, it's well worth deleting the Demos and Utilities directories and the files in them, and it may even be worth removing Preferences and Clock as they take up over 77000 bytes (over 150 blocks). Similarly, the Expansion directory is probably of little use to most Amiga users and could be removed.

Once all this is done, the disk is going to be fairly empty - for instance, deleting all the demos, utilities, fonts and keymaps, all but two printer drivers, all commands (except DiskCopy, Format, CLI in the system directory and about a dozen files in the c directory), Preferences, and Clock I end up with a useful and workable disk with 659 blocks used, and 1099 left. That represents well over 500k of useful disk space and a saving of nearly 1000 blocks.

***

ANNUAL GENERAL MEETING

Subject to confirmation, the AGM has been arranged for 2 O'Clock on the 7th of May, at the Central Hall, Westminster. Pencil this in your diaries, the next Newsletter will have the full details.

USING THE PRISM MODEM 2000 ON A PLUS 4

by Phil Brunt

Greetings to all Plus 4 users. What have you been up to? According to the records there are about 300 Plus 4 members out there somewhere, so a Happy New Year to you all.

By now you are probably wondering what is so interesting about a modem on the Plus 4. Well, following my experiences trying to get the RS232 port to respond with some input or output, I decided to put pen to paper.

It started when I discovered that the Stack interface available for the Commodore 64 could also be used on the Plus 4 --- all the interface does is convert TTL levels from 5v to + or - 10v, suitable for use with true RS232 devices. If you buy this from Meadmore Electronics it can be used successfully to operate conventional RS232 devices such as printers, accessed with:

```
open 128, 2, 2, chr$(54)+chr$(101)
```

This for example sets up the port for a GEC Terminet 300 printer to operate at 300 baud from the Script Plus word processor. Although this is not what the article is about it does have a bearing on it.

Because I had already purchased a Stack interface I decided to examine using the RS232 port with regard to a Modem. I managed to obtain a PRISM Modem 2000, which I discovered was a 1200/75 baud modem, also operating at 1200/1200 baud. It was originally wired for a BBC so the first thing that had to be changed was the cable - the din plug was swapped for a 25 way 'D' type connector.

Having done this and connected RXD, TXD and 0v, I hoped it would work. Unfortunately, being naive, I had not banked on the necessity for software control. I consulted the Plus 4 handbook, with minimal results, and decided to call York Electronics to find out what their Terminal Emulator Program does.

Apparently there is a bug in the Plus 4 Kernal (is this where squirrels keep their nuts?) which the software corrects. I tried it, only to discover that it wouldn't work. The problem occured with the SET UP procedure for the port. Next, I dialled a bulletin board but only got a load of graphic characters coming up on the screen. Where to go from here? Well, a very friendly chap (who knows about these things) said he would have a look at the set up and see what he could do. He discovered that the cable needed a connection on the Modem din plug linking pins CD to CTS. When he tried it on the 64 it worked with no problems. However, trying it on the Plus 4 still proved only partly successful.

Problem --- why could we receive but not send?. This was proving to be very annoying, so after trying various combinations of connections and beginning to doubt the software, I decided to go back to basics and check that the interface was working correctly. Studying the Stack handbook I linked pins 2 and 3 and pins 16 and 17 on the computer's 25-way connector and, writing a small BASIC program to send out and receive characters from the keyboard, I found it worked. It then dawned on me that all along we had assumed that pins 16 and 17 were wired together in the interface. This was not the case, and required it to be done in the connector. Having done this, it all worked correctly, so celebrations were at last in order. I suppose the motto is: don't despair, but keep trying and eventually you'll win.

So to recap, the wiring of the modem to Plus 4 is as follows:-

```
Din Plug Modem end       Plus 4 end with interface & 25 Way D Connector.


       1--------to--------3
       2--------to--------2
       4--------to--------7


    Link 3 & 5          Link 16 & 17
     this end            this end
```

I hope this is of some interest to users out there. Don't forget the Library still needs software you have written, so start sending in some of those programs (preferably those that work) which you think may be of use to other Plus 4 users. THIS MEANS YOU. Let's make 1988 productivity year for the Plus 4. It would also be interesting to hear of any problems you have been having. Incidentaly, the Star NL10 Printer reviewed recently also works very well with the Plus4 and is suitable for use with the Graphic Dump Program in the library. If anyone has any file transfer software or viewdata software that will run on a Plus 4, please contact me.

⁂

SCRIPT/PLUS BUGS

by Richard Hunt

Users of Script/Plus on the Plus 4 machine will be familiar with two very annoying bugs in the cartridge. Mrs Kathe L Holoday of Florida, USA, has sent me two procedures which, although they do not fix the bugs (they are in ROM after all), at least circumvent them. I find Script/Plus, like Easyscript and its companions, a thoroughly acceptable wordprocessor for a small micro, and use it for all my text, whether speech-writing, knocking up pieces for magazines or even creating Assembler or Forth source. It is a shame that there appears to be no support for a basically good product, for I am sure that many of us users would be prepared to pay a nominal amount for upgrades which would eliminate these bugs and enhance the product itself (synchronised column display/output for example).

The two famous bugs are of course the SAVE and REPLACE which doesn't work, and the RETURN or STOP in Disk mode. RETURN fails to remain in Disk mode and after 3 hits deletes one or more lines of text. STOP does likewise, failing to work on one key depression but exiting to edit mode after the third hit. Actually, ESC performs the same function aand these two keys are the only safe way of exiting Disk mode without seriously harming your text.

SAVE and REPLACE

Most people will have found that it is necessary to delete a file before it can be saved with the same title again. This is tedious and potentially dangerous - better to save an updated version, eg file1, file2, file3 etc. If your work is at all important (whose isn't?) I recommend that as good practice at all times. Kathe's solution is absurdly simple - merely add @: to the file name as a prefix, eg @:FILENAME. Experimenters will discover that the usually preferred @0:FILENAME saves a file called precisely that!. @: works a treat, though. Also, of course, putting the title (prefixed with @:) in a remark in quotes at the top of the file serves the dual purpose of reminding you what this file is called, and to enable the use of SHIFT/CLEAR to pick up the first item in quotes from the text, after selecting ESC F to file the text, as in:

```
CTRL/9nb:"@:filename"
```

This technique can also be used to load a selected file from a directory listing.

Enter Disk mode and type $0+ and RETURN. The directory listing is placed into text, and after pressing Function key 2 (ESC L) use of SHIFT/CLEAR will prompt the first filename in the list on the status line. Whilst holding down SHIFT continue pressing CLEAR until the desired file appears in the status line. Hitting the RETURN key will cause it to be loaded.

Disk mode

If you wish to remain in Disk mode, just hold the Control key down and press the 0 (zero) key 3 times. This actually exits to edit mode but instantly returns afresh to Disk mode. To exit Disk mode, as stated, use only the RUN/STOP or ESCape keys.

Thanks, Kathe, for these tips. I find them useful. Useful things should be known by all. Has anyone any other tips like this (not necessarily to do with Script/Plus)?

CBM CAVEAT!

Readers of this article should be aware of the SAVE "@: bug which has plagued most Commodore disk drives since the PET, irretrievably corrupting files on the disk under certain conditions. This bug has been well documented by ICPUG, and is, on the whole, understood. The best way to avoid the bug occuring is to make sure there is enough room on the disk before the file is replaced. SAVE and REPLACE works by SAVEing the new file to disk, SCRATCHing the old file, and giving its name to the new file. If there isn't enough room for the new file, though, the Disk Operating System gets mighty confused, and manages to chain files together, in the wrong place. This is not the only time when the bug occurs, but is certainly the most destructive. Potential users of SAVE and REPLACE should be very careful.

Bill Bremner

⁂

A PLEA

I would like to write an article on the origins of ICPUG and its history. Does anybody have a copy of the magazine with the letter from Norman Fox that started it all. I thought it was in PCW circa 1978 but since I cannot find it I guess I must be wrong. It may have been in Practical Computing or Electronics Today International. If anybody can find it a photocopy of the letter would be much appreciated.

Brian Grainger

⁂

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TEXAS TALES

Betty Clay

This month, I have embarked on a telecommunications venture that is quite old, but is completely new to me. I was offered a guest account on USENET through one of the local universities, and can now participate in the network discussions of the latest news about both the Amiga and the Commodore machines. The learning curve is steep, but worth it.

What is Usenet?

The span of this network is still beyond my understanding, so a more detailed description will have to wait a while. I know that it consists of a number of levels of access. Some participants are listed as UUCP members, which I believe to be people using Unix machines and which seems to cover mostly the college people. Some of the universities also use VAX machines, and each person using one of those has xxxvax as part of his network address.

For example, the Commodore Amiga Technical Support (CATS) staff use a VAX called the cbmvax. There are many computer-oriented businesses who maintain accounts at some level within the network. Some of those that come to mind are AT&T, Sun Microsystems, Felsina Software, Commodore at West Chester and Commodore-Amiga in California, Pixar, and Texas Instruments. There is another level called ARPANET, which I believe to have been designed for companies and universities who were involved in government research.

Usenet is not just for the States, either. I see messages there from people - mostly from the universities - in Australia, Scotland, England, Finland, Germany, Spain, France, Switzerland, Mexico, Canada, and even a few from Japan. From England, I particularly remember seeing communication from the University at Bath. It is easy now for me to see how a program written by a student half-way across the world from us can be made available here within a week.

The node structure

Each location that has a Usenet account is called a node. Messages are received at one location and then posted to others each day. The university I call receives messages from three locations each day, removes any duplicates that might come, and then sends the edited file along to several others.

As you might well understand, the cost of maintaining one of these nodes is something to consider. I was told that industrial clients pay as much as $25,000 (I gathered to be the cost per month, but was not told explicitly), and that the universities paid much less - about $5000. This cost pays for a set number of messages, and if the number actually generated is greater, extra fees are charged. For those sending and receiving overseas calls, the cost is even greater. Sometimes, I think it would be well for some of the more frivolous users of this network to think carefully about these costs. I should think that overseas callers, in particular, would resent paying the bills for those who merely wish to argue about which computer is better.

Individual users of the accounts are not usually charged any fees at all. The cost is borne by the business or university, and they may issue access to as many people as their systems can support at no extra cost. In my own case, I was offered unlimited access during the off-seasons when students are not in school, or when they are not making heavy use of the system. When my response time increases dramatically, I should give up the system to the students. This seems to be a terribly generous offer, and I hope to use this access to help you as well as myself.

Who participates?

Among the things have been sending to ICPUG there are many disks of information called Info-Amiga. These disks contain all of the messages that have reached the Usenet node at The University of Texas (Austin campus) from the very beginning of the Amiga interest group. I believe these messages began in June of 1985, before the first machines were even released to the developers. The Amiga group is by far the most active on the network, having generated more than 13000 messages during this time. During November alone, almost two megabytes of messages were generated. These messages are sometimes quite useless arguments, but more often they consist of questions and answers about system software, hardware, or programming problems. The messages on those disks were downloaded and edited by Don Kassebaum, director of the U.T.Austin computer services, and one of the two charter members of our club who are still active participants.

Almost every day, some of the Commodore staff sign on to read and answer these questions. They participate in discussions, react to suggestions, dispense information about coming events, give programming examples to help people over problem areas, and try to soothe ruffled feelings by explaining why Commodore may have chosen to do something that irritates Amiga users.

The messages and questions come from engineers and software writers who work for the business and industrial participants in the network, and from students and professors in the universities that have accounts. By reading these messages, I feel that I have come to know people like Leo Schwab, who has written many of the most clever graphics demos and hacks. Matt Dillon, author of many Amiga utilities such as the extremely helpful CShell (usually called only CSH) seems to be on almost every day. Bryce Nesbitt is a prolific writer there. Bryce first came to my attention through his programs to speed up the 1541 drive. He is now writing for TRANSACTOR, and is putting together a set of technical notes which he posts to Usenet. These are intended to be printed out and saved in a notebook for reference. Fred Fish announces his new disks here before they are actually mailed. I have learned a great deal from the messages written by Bob Page of Lowell University in Mass., from Chuck McManis who is an engineer at Sun Microsystems, from Marco Pappa of Felsina Software, and from Larry Phillips of Vancouver, B.C., among others. All of these people have written software that has helped to fill the Fish Disks.

And software?

But messages are not the only benefit of Usenet. Almost all of the freely distributable software that has been written for the Amiga has first appeared on this network. Each interest group has a message board, a library for source code, and another for the binary code. I can now check the library regularly and download both the source and the executable code for the software as soon as it is released to the network. Fred Fish, who puts together the famous FishDisks, is a participant in this group through the node at Motorola Corporation.

Most participants are now sending him their material on disk, but in the earlier days, he downloaded the software, compiled it, wrote documentation in some cases, and helped all of us to get started using this machine. It has become the usual practice now for programmers to upload their source and documentation and also the binary files, though some will not part with their source code, and others send the source only.

Well, after only one week as an actual participant on Usenet, this just about covers my knowledge. I am having to learn to use KERMIT - the communications software of choice among Usenet folks - and the VT100 terminal emulator. Usenet uses UNIX commands, so those must be learned too. The on-line manual pages must all be downloaded and studied. I have much to learn.

But I mentioned Commodore machines!

Yes, there is an interest group on Usenet for the Commodore machines. They also have messages, a source code library, and a binary code library. I have not yet had time to explore this group, but I do hope to be sending you things from that group also since I now have access to it. The Amiga is a wonderful machine, but I still use my 8032 every day, and my C-64 as well.

AMATEUR RADIO & COMPUTERS

by Simon Lewis & Steve Studdart

Hello and welcome to the first of hopefully many insights into the world of data communications. Over the next few issues we aim to introduce you to a completely new dimension of ideas for that funny grey box that sits on your computer desk (no, not an ST!).

Believe it or not, there are quite a few uses for computers other than word-processing and spreadsheeting. Thousands of radio amateurs all over the world enjoy talking to other amateurs using their home computers. Some modes utilise just a computer while others require a little more technical 'know-how', but don't worry, because we will explain how it all works.

Most people have views of radio equipment as large throbbing boxes, glowing purple and full of lethal voltages! Most modern equipment is, in complexity anyway, on par with todays 16-bit micros.

Data communication techniques come in various forms, some quite simple, others very complex. However, nearly all can be mastered in a few hours, and most cost little more than a modem. We will show you some of these different systems and explain how the equipment works, as well as how you can 'have a go' yourself.

Lists of suppliers of both software and hardware will be supplied where necessary. Sometime in the future, we will take a look at the various other radio-biased societies to see what they offer to the prospective amateur.

At the end of each item we will supply a further reading list, which goes into much greater detail than is possible to cover in these few short pages. Some of the equipment available will be covered in later issues as well as further insights into the software necessary for data communications. Hopefully there will be some reviews of software, equipment, books and some tips on operating the various data modes.

With luck we will shortly be getting together a selection of programs on disk which will be available to ICPUG members under normal ICPUG library rules. This will probably take a little time, so they might not be available immediately, but we're working on it. I won't be running the library, Steve Studdart from Clwyd (see address at end of this item) has kindly volunteered to do it.

While on the subject of software, we are looking for any programs which are radio-biased for inclusion on our disk library. Both myself and Steve will gladly accept any such program.

I also hope to gather a list of active amateurs who are members of ICPUG to form a sort of help list for those who don't fully understand aspects of the radio world. This will be a voluntary scheme, as we don't wish to bother anybody who wants to get on and do his or her own thing. However, we do feel that it could make new friendships, which can only be a good thing.

I would appreciate any hints, tips, projects or other items you may have for inclusion in the column. As always with these columns, nobody wants to listen to my ramblings all the time (do you?), So let's hear what you've being getting up to with your machines.

I look forward to reading your letters and recieving programs that will help those less knowledgeable. And finally remember - let's have fun out there!

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[This article just missed inclusion in the last Newsletter and was not lost as the writers thought - Ed.]

***

STD INDEX

I had a typist with some time to spare so I had her type the STD codes from the telephone directory using Superscript. There are nearly 5000 codes so it generated several files. I then wrote a short program to sort the codes into 'numerical' order, (Actually an alpha sort on the numbers) and to re-write them into page length (240 codes per page) files. These files, together with a utility program to print the 21 pages of codes have been passed to Joe Griffin who has accepted them for the Library.

If you ever wished to know the location for a given number you now have access to an easy reference.

John Tanner

REVIEW - FORMS IN FLIGHT

by Iain Graves

Without doubt one of the most impressive features of the Amiga is its graphics capabilities. With the ever-increasing release of graphics programs swamping the Amiga User it seems to be only days after one is released before a new program with an even higher level of sophistication arrives.

Forms In Flight is one of these programs, but with a substantial difference. It allows the user to draw complex 3-dimensional drawings with a few simple mouse movements. Just relish the thought of drawing something as simple as a polygon in 2D and then asking FIF to turn it into a 3D solid rendered, shaded cylinder in full perspective, and then animate it in anyway you wish. Well, this package does all this and more --- quite easily I might add. An entire animated script can be created and displayed using only the mouse.

Forms In Flight comes packaged in a very expensive-looking ring-bound A5 folder. Upon opening you find one program disk (release V1.11 --- the latest PAL version) and quite a comprehensive loose leaf manual. Attached inside the front cover is an envelope containing a revision addendum for V1.11, which besides being a PAL version includes updated features such as a stand-alone player. The concept of the manual, being a reference guide and a tutorial rolled into one, is good (if only more software packages did this). It should be mentioned at this point that FIF was not designed for the-faint hearted.

In terms of memory usage, FIF requires a minimum of 1 Megabyte of RAM to run. I found that even with this amount of memory, just loading in one inanimate object bordered right on the 1 Mb limit. In fact, I managed to guru my A500 quite easily. A quick 'phone call to David Youlton of Micro Magic revealed the answer. He said that on NTSC (American) machines all objects supplied on the demo disk would run quite happily. Because we use the PAL system, the extra 56 lines difference causes the problem. In future, a recommendation of 1.5 Mb will be stated as the minimum memory requirement for UK and European machines.

Creating an object

One of the easiest ways to build a 3D solid is outlined in the first tutorial. On loading, you are presented with a high-res screen (stand by for flicker). To be fair, the start screen has been set-up in blue and black colours which I found to be quite easy on the eye. The screen presents you with a black

background and blue wire frame pyramid, cleared by accessing the top left-hand pull-down menu and executing PROJECT - NEW. You are now ready to create your first 3D solid object. You are then shown how to draw a simple polygon, and call on the sweep function, sweeping the object away from you to create a 3D form. Sweep can be specified in a straight line or in a rotation around any axis you wish. These functions allow the user to generate sophisticated 3D solid objects in seconds with just a few clicks of the mouse buttons. Moving a polygon through these motions seems to create a smooth curved surface, but actually the program converts it into a set of flat surfaces, with you the user specifying the number you require.

Changing the view that you see the object in is very neat. Simply click the mouse button anywhere on the screen and 'Voila!' -- the camera or view that you are looking at is moved proportionally to how far the click was made from the centre of the screen. Amongst the many options available to you in the pull-down menus are: switching between wire frame and solid figures, adjusting the light sources, and shading and colour control. For detailed movements of camera, light sources and so on, you are presented with a calculator-style requester gadget. All figures and entries into this can be achieved by using the mouse or numeric keypad.

The enormous variety of possible actions available to you is overwhelming. In most circumstances, response to a mouse-click is instantaneous, but if larger or more complex calculations have to be performed, it can take anything up to 60 seconds.

Directing your animation

This part can get slightly complicated. Thus, you enter the Editor: this is where you, as the Director, have to specify how you wish to see your animation performed. You are presented with a screen full of data and numerous buttons for clicking. After several references to the manual you will work through this wierd and wonderful creature. I found this editor really excellent in allowing you to plan frame by frame just what you want each object to do. The manual describes the principle of creating your animation as a hierarchal tree starting at the top and gradually flowing out and down.

Putting it all together

Last, but not least, comes the best bit: watching your frames burst into life! All you need do is click on the GO button and sit back and watch. Each frame is displayed on the screen and then saved to disk, one frame per file. Frames can incur some quite time-consuming calculations, and the manual does warn you that it can take up to 8 hours, but simple ones that I tried only took about 15 minutes. You are not required to do anything while all these calculations take place, so you might as well make a cup of coffee or, with the more complex animations, go to bed.

Playing back your animation

A separate player program is supplied on disk allowing you to view your completed animation. Double-click on the icon call FastFlight and you are presented with a screen containing a load requester gadget. Select the animation you wish to show, and the Amiga gets the required information. At first you will think nothing has happened. This was the only real fault that I felt the program had, but a simple click on the Cancel box reveals all. A screen is displayed asking you to specify certain parameters affecting the animation, such as how many colours and what resolution you want it to be displayed in. When you have selected, click on the O/C box and the program will load the frames. Each frame is displayed as it is loading, which in some cases can take a little time. After loading, the animation will run. I was amazed at how brilliantly smooth and realistic the animation was when played back. A quick press of the function keys is useful here as it allows you to specify frame playback rate from jerky to smooth.

Conclusion

I personally think that this program has a great deal to offer, especially to the first-time animator. Although care and patience are needed to develop good animation, the product is very professional and well presented. I liked it a lot, although there are some changes I would like to see, such as more efficient data disk storage without the need for hundreds of files. Furthermore, provision for the inclusion of sound effects and the loading of back-drop screens from art packages such as DPaint would be a major advantage.

All in all, Forms In Flight offers what I believe to be the best 3D animation currently available on the Amiga. It is available from:-

Amiga Centre Scotland,
4 Hart Street Lane,
Edinburgh,
Scotland.
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***

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ICP

PRODUCING ICONS ON THE AMIGA

by Pete Miles.

The first icon anyone sees is on booting the machine --- an in-consequential little square. However, this little square is simply a pictorial front for what is quite an ingenious little program. This icon is one of 5 groups namely disk, drawer, project, tool and garbage. The information for icons is contained in the icons library of the libs directory of the Workbench disk. We do not need to access this library.

Each group deals with a specific area of Workbench activity and these groups will be discussed in turn with examples on how to use them.

Before starting it is a good idea to use a suitable disk that you know works. The obvious is the Workbench disk which has examples of every group. DO NOT USE the disk you boot with, but make a copy. A small digression... always but always make backups, of any important disk, at least 2. Very often we answer 'phone calls and on asking the magic phrase "Have you made a back up?" we are greeted by a deathly silence.

The other disk that you will find very useful is the new Amiga Library disk 'Icons'. Obtain this in the usual way from the pertinent disk copier (not me) whose name and address appears in the back of the Newsletter.

Lastly, read the tutorial on IconEd in the handbook which comes with your Amiga. It is easy to follow and with a bit of practice all doubts will be removed.

For owners of Amiga 500s or 1000s with 1 drive you really ought to make a RAMdisk. If you don't know how, do the following from the CLI:

```
1>makedir ram:c        ;makes a directory called c in RAM
1>copy c ram:c         ;copies directory c from boot disk to ram:c
1>cd ram:c             ;makes ram:c the current drive.
1>assign c: ram:c      ;assigns the name c: to the directory ram:c
                        and tells the operating system to get all its
                        commands in the c directory from RAM
                        instead of the boot disk. Prove it by typing:
1>dir ram:c            ;the directory will be listed.
```

In practice you won't need all the commands from c but you can sort that out at your own pace. Also copy diskcopy and IconEd from the system drawer into the RAM disk.

```
1>copy df0:system/iconed ram:c
1>copy df0:system/diskcopy ram:c
```

Having done all this you should be ready to go.

Drawer icons

Draw icons represent directories in which you can keep pretty well all other directories and files with the exception of the Trashcan, which, by its nature must go in the root directory of the disk. Assuming you are in the Workbench, click on the Workbench disk icon and you will see the familiar window open with its various drawers and other icons. Before you start to create and move icons about, have a look at some of the icons visible. Click on the utilities drawer once and then go to the Workbench menu bar and select info. A window opens and displays the relevant information for the drawer. You could, I suppose, call the icon a key which opens a drawer. The window will tell you the name of the drawer and its type, that is whether it is a drawer, tool or project etc. In this instance it is a drawer. There is very little other information shown, which is fine in this case. Select quit. Click once on the CLI icon and look at the info window. This time the type is Tool. For the vast majority of programs and files this will be the type of icon required. Text files have a different sort of icon. Click on quit. All icons can have any sort of pictorial representation you like but only certain icons will do certain jobs. A disk icon will not take the place of a drawer or tool, nor a tool a text icon and so on.

Assuming you have been patient and acquired the Icons library disk, copy a drawer icon from the Amiga Library disk 'Icons' as follows:

```
1>copy df1:icons.info df0:
```

Now look at df0:, and somewhere in the list of files at the end of the directory list you will see icons.info. At this stage the draw is not live as far as this window is concerned. To prove the point click once on the draw icon and select Workbench info from the menu bar. A large window will try and open. This is shown by the screen flashing briefly. To make the draw icon 'live' its name must be changed to the directory to which it refers. In other words if the directory name is 'Fred' the icon must also be called Fred.

```
1>makedir df0:Fred
```

Click once on the icon and select Rename from the Workbench menu. A long requester box will appear across the middle of the screen in which will appear the name 'icons'. Use the Del key to erase this name, type in the new name 'Fred' and press Return. The case of the characters does not matter, but in so far as the name will appear on the Workbench screen it is tidier to start the name with a capital. Now if you click on the drawer icon once and select Workbench info the screen will show the icon specifications. Don't worry about trying to understand all the information at this stage. The status is deletable, no comment is necessary and no Tool Types are required. The job is done. Click on quit and return to the main screen. It is now possible to copy other drawers, tools and projects to this drawer almost ad infinitum .Of course this is not always ideal. To see the new drawer exit the Workbench contents window and click on the disk icon again. The reason for this is that after making changes the system does not know you have made any changes until you quit the screen and then re-enter it again. You must do this every time you modify the contents of a directory to view the changes made.

To do the same thing from the CLI:

```
1>cd df0:
1>makedir Fred
1>copy df1:icons.info df0:
1>rename icons.info as fred.info
1>dir df0:        ;check icons.info is renamed correctly.
```

However, it is always worthwhile to check occasionally with the Workbench that you have done everything correctly. After all, icons are what Workbench is all about.

Tool icons

Tool icons are aimed primarily at programs you want to run from the Workbench. The basic principles are as outlined above, but there are differences.

From the system drawer on the Workbench disk click one on, say, DiskCopy and select Workbench info. The window opened will be basically the same as for the drawer icon earlier. The differences are however crucial. The name appears at the top of the screen and is DiskCopy. Below that is the icon type Tool and below that the size of the program in bytes and blocks. 99 times out of 100 that is all the information that needs to go in this window.

IconEd supplied in the System drawer on the Workbench is worth a look if you havn't already done so. The small square icons shown with coloured pens are tool icons. The design or look of the icon is not that important but it helps if the icon bears some resemblance to the task in hand. If not then a simple border with the appropriate name will do. The Amiga Library disk Icons contains about 70 designs, and there are various drawers on your Workbench disk with other designs you could use.

The library Icons disk contains various specialised programs of which one is called Icontype. This is designed to change the icon from one type to another simply by typing at the prompt (cd the directory in which the icon appears to be on the safe side):

```
1>icontype Fred.info tool
```

will change the draw icon Fred into a tool icon. Doing that would stop the drawer being used as previously. Now when the icon is clicked on it would expect to find a program, so to get the icon to work you must have a program called Fred in the same directory as Fred.icon.

Text icons

Text icons vary in as much as they are designed to enable you to read text files from the Workbench. Various designs have appeared that represent text, most notably the two 'Book' designs, both of which open (ie they are '2 stage cons'). Again, these designs are available on the Icons disk in the library.

To use a text icon is quite simple although it appears complicated to start with. To get the idea it is useful to look at directories from any disks you may have, especially the early Fish disks. These early disks did not always have an icon so you could read the text files from the Workbench. Put a disk in drive df0: and run the directory.

```
1>dir
```

Suppose a file called Readme appears but you are unable to see the corresponding icon Readme.icon. Fair enough -- you cannot read that file from Workbench. Do the following. With the Icons disk in a drive, say df1:, type the following:

```
1>copy df1:icons/various/notes.info df0:
1>dir df0:         ;notes.info is now in the root directory of df0:
1>rename df0:notes.info as df0:Readme.info
```

Now click on the disk icon in which the directory appears. All being well, the 'Book' type icon will have appeared. Click once on the book icon and select

Workbench info. The window will open showing details of the icon. In this instance the title will be Project with other details as before. With one noticeable exception — a new requester is between the Comment and Tool types. This is the Default tool. Its main purpose is to allow the icon to access the program which will read your textfile. Early disks often called:

```
:sys/utilities/notepad
```

which is the same notepad you may have seen in the utilities drawer on your boot disk. However, a neater way is to copy a text reader program to the disk which has the text file. A very good program is called 'Less' and is on a new library disk, Utilities 5. Lets assume you have this disk. Do the following. Put the Utilities 5 disk in df1:

```
1>copy df1:less/less df0:
1>dir df0:
```

The program less will now appear in the root directory of df0: which is the same place as the Readme text file you want to read.

Go back to the Workbench and get the info window. Now in the Default Tool box type 'less', press return and click on save in the lower left hand corner. Now click on the 'Book' icon and the textfile will load, a window will open and you can read the file.

Disk icons

Are only for use in displaying the disk on the Workbench screen. The Amiga Library icon on the newer disks has a specific design to associate the disk with the club when the disk is put in the drive. This icon is available from the Icons disk in the Various drawer.

If you have a disk of pictures or music, you might like to give the disk icon a new look. There is an icon resembling a tape cassette in the drawer Icons2 in the Icons library disk. Put the Icons disk in df1 and the receiving disk in df0 To use this do the following.

```
1>cd df1:icons/icons2
1>dir
  .info                      arcre.bat
  executeme                  Girldisk.info
  Guitardisk.info            Mididisk.info
  Musicdisk.info             Readme
```

```
                             Readme.info
```

This is what will appear on the screen.

```
1>copy musicdisk.info df0:disk.info
```

Remove the disk in df0 when the drive light goes out. Reinsert the disk and click on the new icon that has appeared. That's it — a new disk icon.

Garbage, trash rubbish etc

This icon is totally isolated and whilst you can, like all the other icons, redesign it to your hearts content, it will only get rid of rubbish. That's all that can be reasonably be said. It is useful to have a Trash icon on your disks for obvious reasons and before anyone says there are not any on the library disks this is stop you inadvertently scrapping the programs.

I have already mentioned the Icons disk from the library several times. It is a very interesting disk of goodies which includes programs for making icons, changing their types etc. Study these programs and the sky's the limit. One small point — it helps to have a copy of a paint prog like DPaint2, preferably the PAL version.

* * *

TALKING POINT

by Brian Grainger

Is hobby computing dying?

Now I have grabbed your attention with a provocative question I will expand on my own personal opinions. I bought my first computer, a PET, when they first arrived in the UK. It cost a fortune, but it was exciting. I soon joined a group of enthusiasts who ultimately called themselves IPUG. In addition I was earning some money writing programs for the PET and corresponding with a University student. He was into Number Theory, a branch of maths I find fun, and wanted someone with a computer who could write and run some programs that would seek particular types of numbers. In short I was DOING something with my computer despite the fact that when I bought it I had no real idea what I was going to use it for!

Compare that with what happens now. When a new machine from Commodore arrives it seems the first thing that happens is everybody moans about the price. Some people still buy it and start to write about it. Because they are not superhuman and because interest has waned they stop writing about the older machines. Suddenly a lot of material is being written for the new machines by a select few. Those who have earlier models now start moaning that nothing is being written to serve their interests. Eventually the price of the new machine comes down and more people buy it. Now I would have thought that this would provide a bigger pool of writers and would create interesting articles on things being done with the new machines. In reality there are a few new writers but precious few articles on things being DONE. Plenty of reviews, thoughts on latest commercial software, potential products in the pipeline. However, a distinct lack of things being DONE, despite the fact that the machines are highly innovative and have a lot of potential for play.

Perhaps it is me but the whole thing seems to have lost its excitement. All that seems to be of interest is what has been done already. Where are the future Simon Tramners and Tom Cranstouns (authors of Superbase) who started by DOING something and letting others know about it in ICPUG.

I think there are two morals here. To those who want something about the older models do not wait for someone else to do it. Do something yourself. Perhaps you will run into problems. Write about it and ask for help. Then the older models will be catered for. Secondly, all you owners of brand spanking new computers. Instead of just buying the latest super game or spending half your life copying all software you can get your hands on DO something. It is far more interesting! Write about what you do to ICPUG. Then I can write less, the magazine will become more interesting and hobby computing may come alive again.

I will start the ball rolling. I would like to have a procedure that would take as parameters a set of menu items. It would return the item select with the mouse. It needs to be written in AmigaBASIC. Another idea is how do I write in AmigaBASIC a customised input screen much like an input screen for Superbase. If anybody can do these things PLEASE write about how to do it!

Those are my thoughts - any comments?

***

REGIONAL ROUND-UP

by Brian Wise

Listed below are the ICPUG affiliated clubs, if you are a club organiser and your club is not listed or you wish to start a group please contact me with details.

1520 PLOTTER GROUP: John Bentley (06286 65932) National group by post.

AYR: John Smith (0563 830407) meet on the 3rd Wednesday at Symington Priary School Kilmarnock.

BASILDON: Walter Green (0268 22430) contact Walter for location.

BASINGSTOKE: Colin Smith (0256 55262) meet on the first and third Mondays at Hill Rise Hall, Bach Close, Brighton Hill, Basingstoke at 7 to 10pm.

BURY ST EDMUNDS: Mike Dunham (0284 8500228) meet at The Church House, on 2nd Wednesday of each month.

CAMBERLEY: Dick Falder (0252 713818) meet at The Adult Education Centre, Frauce Hill Drive on 3rd Wednesday.

CANTERBURY: Ron Moseley (0622 37643) meet in Physics Lab, Kent University, 1st Wednesday in the month.

COVENTRY: Will Light (0203 413511) meet Stoke Park School, fortnightly on alternative Wednesdays.

DERBY: Ray Davies (0332 514016). They meet at Derby Professional Colour, Sandown Road, Off Ascot Drive, Derby, on the second and forth Tuesday at 7 pm.

DISABLED GROUP: David Bate (0296 842707) National group by post.

DUBLIN: Geoffrey Reeves (0001 555517) meet at St Andrew's College, Blackrock, Co Dublin.

DURHAM: Jim Cocallis (0385 67045) meet 32 Old Elvet, Durham, on Thursdays.

EDINBURGH: Martin Lowe (031 557 4242) meet at the Edinburgh Amiga Centre.

KILMANOCH: John Smith (0563 830407) meet at Symington Primary School, 1st Wednesday in month 7.00 to 9.00 pm.

LEICESTER: John Broad (0533 716539) meet on the 1st Wednesday, contact John for location.

LIVERPOOL: Jack Swallow (051 521 6910) They meet at 8.00pm ever Wednesday during school term at Cardinal Heenan School, Honeys Green Lane, Knotty Ash, Liverpool.

MACCLESFIELD: Melvin Mayers (0625 32852) meet alternate Tuesdays at The Bulls Head, Market Place, Macclesfield.

MANCHESTER: Stephen Royle (061 428 3135) meet 1st and 3rd Mondays at 246 Wilmslow Road, Fallowfield, Manchester.

MILDENHALL: Contact Joe Bowman (036283 8439) meet USAF Recreation Centre, RAF Mildenhall on 3rd Sunday in month.

MINISTRY OF DEFENCE: Wg Cdr John Jeffrey (01 218 0988).

NORTH GLOUCESTERSHIRE: Robin Harvey (0242 527678) Meeting place Cheltenham Ladies College, Archway Entrance, St. Georges Road, Cheltenham, Gloucestershire. on last Thursdays except in school holiday periods from 7.30 to 11.30pm.

NORTH HANTS: Ron Geere (0256 26830) The club now meets at Vic Winstanley's house at 62 Queens Road, Farnborough, Hants. on the third Wednesday of each month at 7.30pm.

NORTH HERTS: Brain Grainger (0438 727925) writes to tell me that they now meet on the Last Wednesday 7.30 to 10.30 at the Hertford Road Community Centre, Hertford Road, Kenilworth Close, Stevenage Herts.

PAISLEY: Charlie Heath (041 889 8929) location South End Action Centre, Stock Street, Paisley, alternate Mondays.

POOLE: Douglas Shave (0202 700428) check with Douglas regarding meet.

PRUDHOE-ON-TYNE: Rob Christer (0661 35507) meet once a month in the Concert Room of the Prudhoe Conservative Club, and arrange their meeting to suit their members as most are shift workers.

SCARBOROUGH: Tim Carruthers (0273 353550) meet at The Scarborians Sporting Club, Market Street, Scarborough, 3rd Tuesdays of each month.

SHEFFIELD: Phil Hicks (0742 420550) meet at Polytecnic contact Phil for day and time.

SLOUGH: Brian Jones (0734 661494) meet at Slough College of Higher Education, Wellington Street, Slough on the second Thursday at 7.30 to 10 pm.

SOLENT: Tim Arnot (0705 750595) meet at the Plessey Sports & Social Club, Segensworth Road, Titchfield, Hampshire, on 1st and 3rd Tuesdays 7.30 to 10 pm.

SOUTH EAST: Brian Wise (01 668 3017) the club meets ever Thursday except the first at Biggin Hill Library, 7.45pm.

SWANTON MORLEY: Joe Bowman (036283 8439) meet at The Education Centre, RAF Swanton Morley, every other Thursday at 7.30pm.

WAKEFIELD: Stan Barker (0924 275277) check with Stan for time and location.

WEST BERLIN: Captain R Harriron (010 49303094476).

WEST RIDING: Kevin Morton (0532 537318) meet at the White Horse Inn, Fall Lane, East Ardsley, Wakefield at 7 pm on the 1st and 3rd Wednesdays each month.

WOLVERHAMPTON: Herbert Whitley (0902 733332) contact Herbert for location and time.

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LANGUAGE LISTINGS

by Brian Grainger

A few updates to the last listing have come my way. Paul Schofield in Switzerland wrote to write about two languages.

Abacus BASIC-128 is thought to be supplied in the UK by Crown Software in Spalding at under £40. I presume it is for the 128 but Paul does not say. In any event Paul says that although not being a fan of BASIC he tends to use it more than Oxford Pascal.

Secondly, Paul talks about PROMAL, available in several versions for the 64 from:

System Management Associates, 3325 Executive Drive, Raleigh, North
Carolina 27609. USA.

Costs around $49 for end user versions and up to $100 for developers versions. Paul reckons that after a bit of use it becomes the only language you use for the 64. It supports FORTRAN type data structures with an improved Pascal style syntax, which borrows from some features of Modula2 and C. The result is a very versatile language which compiles quickly and generates lightning fast code. The 64 version comes with a very user friendly operating system called the Executive and a super full screen editor with most facilties found in good word processors.

Paul provided some benchmarks which indicated that PROMAL ran 21 times faster than Commodore BASIC (and 7 times faster than COMAL 2.0). When the US COMAL Users Group Ltd. had a first look at it quite some ago they were very scathing quoting inadequate error messages and poor support from the suppliers. They also regarded it as more akin to FORTH than COMAL. It sounds from Paul as if PROMAL has improved since then and maybe worth investigating.

Malcolm James wrote to update me on the prices of some products I mentioned in the last listing. Oxford Pascal 64 on disk now costs £19.95 as per the cassette version. Abacus COBOL is now £29.95 and I should have mentioned that it does NOT need a CP/M cartridge as does Nevada COBOL. Super C 64 has been reduced to £39.95. Calco Software, the suppliers of these products also have a different phone number: 0483-504125.

To finish off, Malcolm asked for a source of FORTRAN for the 64. Anybody any ideas? Another query that has been passed to me is a source of COBOL for the Amiga. Has anyone heard of such a product?

ICPUG SOFTWARE LIBRARIES

by Joe Griffin

A great deal of uncertainty seems to exist, particularly amongst newer members, concerning what the Software Libraries contain, how members can obtain access to them and how much it costs to use the service.

Who run the Libraries

The Libraries are operated (as are virtually all aspects of ICPUG) on an entirely voluntary basis. The Library Organisers and Copiers all operate in their own time, unpaid and in most cases using only their own equipment. However, it is agreed that any repair costs arising from use of equipment for ICPUG will be reimbursed.

Our Library Organisers co-ordinate the libraries for the various machines. We receive, examine and (if suitable) incorporate any new material into the library. For the more popular machines a group of Copiers provide disk or tape copies on request from the members, while for the older, or more specialist machines, the organiser also acts as copier.

Contents

The Libraries contain PUBLIC DOMAIN programs from a wide range of sources, including our own members and other user groups. ICPUG DOES NOT SUPPORT SOFTWARE PIRACY and so, they do NOT contain 'unprotected' copies of commercial programs or other copyright material. Nevertheless, there are a great number of very good programs available from a wide range of sources.

What members may obtain

In line with our Public Domain policy, members may obtain all the material in the library by successive requests. However, in particular with the Non-ICPUG Amiga disks, there is far more material available than any one member can use. Pete Miles tells me that many of the later Fish disks contain copies of material from earlier disks, with bugs fixed or merely created by using a different compiler. Does it really matter whether the program you are using was compiled using Lattice C, or Fred Bloggs C? The recommendation is to look at the higher numbered disks first. Please consider whether you really want the material on the disk or are merely collecting software. With my full consent copiers who receive repeated requests and suspect collecting may push such requests to the back of the queue.

In order to retain a measure of control over the work-load imposed on the Copiers, we do restrict the amount of material which may be obtained from any one request.

Disk Users may obtain up to two disk copies at a time (Amiga up to 5).
Tape Users may obtain up to four programs, from any one disk.

These are general guidelines. If you have any queries, contact the particular Library Organiser or Copier (enclosing an SAE for the reply) to obtain specific details of what he/she offers.

What it costs

Unlike many of the American User Groups, ICPUG DOES NOT CHARGE A COPYING FEE. However, we do require that you supply the material onto which the copy will be made and also that you supply packaging and postage for the return.

PLEASE, do not send the cost of postage to us, send STAMPS. We all give up our spare time to provide your copies, which means WE have less time to do our own computing. In particular, we are not post offices and do not carry a stock of stamps. If you send us money for the return postage, there is bound to be a delay until it is convenient for us to get to a Post Office.

Naturally, we make an exception for Overseas members, who should send International Reply Coupons or a cheque/money order (in Sterling, drawn on a UK bank) to cover the amount of material sent. Please note that non-Sterling cheques etc cost more to cash than the postage and IRC's are not worth what they cost you! In Eire, an IRC costs 72p; to us it is only worth 22p. As a general guide send a minimum of one and a half IRC's per disk.

The libraries

A full list of the Copiers is given inside the back over of the Newsletter and is updated every issue, as required, but some amplification of the system may be of use to newer members. In particular, if we know what machine you have, we can supply you with the latest information on your library.

For ALL the libraries we are establishing Catalogue Disks, which will contain at least a copy of the directory of each disk. Most of the catalogue disks will contain text files describing the operation of the programs on the disk.

PLEASE NOTE : Printed copies of the catalogues are not available.

'PET' Library - Organiser: Joe Griffin

At present over 40 disks are available in the PET Library. In 4040 format, two catalogue disks are available, containing the lists for the CBM Workshop disks and the ICPUG disks, respectively. On 8050s, these are all on one disk. For tape users, I am prepared to dump the catalogue disks onto two C-60 tapes.

VIC Library - Organiser: Joe Griffin

3 disks of material are available (4040 format) or one disk in 8050 format.

C-64 Library - Organiser: David Miller

12 disks (plus a catalogue disk) currently available. A number of disk/tape copiers dispense the material from this growing library. Please use the copier who deals with the first letter of your surname. (Overseas copies and copies on 8050/8250 disk from Joe Griffin.)

Plus 4 (and C-16) Libraries - Organiser: Richard Hunt

At present three disks are available. If anyone has material suitable for the library for these two machines, we would be pleased to receive it. Please contact Richard, with full details.

128 Library - Organiser: Chris Wright

Again, a team of copiers distribute the 128 library. Please note that this is for 128 Mode and CP/M material only. C-64 mode material is available from the 64 library in the usual way. Public Domain CP/M material is also available on 1541 format disks for the 64 with Z-80 cartridge.

PC Library - Organiser: Tim Arnot

There are over 100 disks in the PC Library and the list is still growing. This library is distributed by a team, but here the division is by subject. Pete Crowder holds the ICPUG Catalogue Disk.

Amiga Library - Organiser: Peter Miles

Our newest library also has about 100 disks. These are divided into two main groups: ICPUG and Other Public Domain. The two sets of copiers do not necessarily hold material from the other group, so please ensure that you send your request to the correct copier.

In addition to the machine-specific libraries, there are two Special Interest Groups (SIG's) within ICPUG, each of which has its own program library.

COMAL - Organiser: Brian Grainger

Support for ALL versions of COMAL from Basic 2 to 128. Much material available especially for Versions 0.14(disk) and 2.01(cartridge) for the 64.

1520 Plotter Group - Organiser: W G C Austin

Specialist group within ICPUG, trying hard to expand support for the plotter. One disk currently available.

Obtaining copies of library material

To obtain copies of catalogue or library disks, please send:

A statement of what you want
Disks (max of 2- except Amiga) STATING format required or Tape
Re-usable packaging suitable for return
Pre-addressed label for return
Return postage
Please include your membership number.

Packaging of disks for library copies

Some of the ICPUG Library copiers are now copying over 90 disks per night. With a workload like this, we are going to have to get tougher over the rules.

In particular packaging of disks causes a great deal of time wasting for copiers. The current 'record' is 30 staples on one jiffy bag - 3 would have been adequate. Worse perhaps is when the staples are covered by sellotape; this makes them almost impossible to remove. Our recommendations are:

3.5" disks - a jiffy bag stamped and addressed for the return; placed inside an ordinary envelope (which can easily be opened).

5.25" disks - a disk mailer stamped and addressed for the return; placed inside an ordinary envelope (which can easily be opened). (If a mailer is not available, use two pieces of stiff card taped together and enclose a separate envelope for the return.)

Please label the disks with what is required. It saves trying to keep a stack of letters/notes in step with a pile of disks. If you label your disk, it is a lot easier for the copier to keep track.

5.25" disk users note that we will not supply flippies. My recommendation to all copiers is that they only copy onto the first side of the disk.

Some copiers require formatted disks, others like the Amiga and PET don't. If in doubt, send formatted disks for your copies

64 LIBRARY ORGANISER

by David Miller

First things first: a big thank you to Andrew Hartley who has been 64 library organiser for some time. Good luck on your recent move and promotion.

Ray Metford retires as the L-O librarian, and is replaced by James Mason (see inside back covers for details).

Well here I am, just into the new year and starting a new position with ICPUG. I was just a member until the end of 1986 when I became a library copier, and now I am your new library organiser. What a rapid promotion! The pay is out of this world; so are the hours and electric bills for burning the midnight oil [oil bills surely? - Ed.]. I will try to improve the library in the future but, and it is a big but, need your help. Your progs are needed to bolster up, fill in and expand the catalogue. So get your fingers key-tapping and program your 64s to bring help and joy to other members.

A new disk of utilities (U4) is ready but missed the copy date for the Nov/Dec magazine:

```
 0  icpug c64 lib    u4 2a
 4    start              prg
 8    menu               prg
18    list-me.u4         prg
10    10 sec format      prg
15    6502 disassemble prg
10    backup.c64         prg
 3    base               prg
 4    bootmaker          prg
25    c-64 calculator  prg
 4    comma 8.doc        seq
 5    comma 8            prg
40    custom menu        prg
10    debump text        prg
13    icpug debump       prg
13    dir asst           prg
15    disk check         prg
24    disk doctor.c      prg
42    disk wizard 3.0  prg
11    epson setup        prg
```

```
 7    error detector   prg
 8    error to 42      prg
 3    file protect txt prg
11    file protect     prg
11    hex-dec-bin.c    prg
22    housekeeper      prg
31    kermit text      prg
90    kermit rs232     prg
 4    list scan text   prg
 3    list scan        prg
 5    lock unlock.c    prg
18    menumaker        prg
 7    mps801 font text prg
16    mps801 font      prg
 4    ptype            prg
10    relfile copy.c   prg
 3    rem highlighter  prg
37    steve diskedit   prg
10    steve.inst       prg
48    super copy       prg
20    super dump text  prg
 5    super dump prg   prg
17    yellow pages     prg
 0  blocks free.
```

⁂

FORTH LIBRARY

by Richard Hunt

Files on disk are described below and are held as both program files and sequential files as described in the last issue. The contents is of course all forth sourrce code. Also thereon is a program that enables the load address of a program file to be changed and a BASIC sequential file reader.

```
0 FORTH.LIB       01 2A   ; Comment
3   READ-ME          PRG   ; -------
1   -DISK UTILITIES- PRG
8   LOAD ADDRESS     PRG
```

```
3   READ ANY SEQ     PRG
0   ---------------- PRG
1   --PLUS4 ONLY--   PRG
24  DIRECTORY FILER  PRG
0   ----- ---------- prg
5   SEQUENTIAL.1     SEQ ; part 1
5   SEQUENTIAL.2     SEQ ; part 2
4   SEQUENTIAL.3     SEQ ; part 3
13  SEQ.FILE         SEQ ; combined
2   PRINT            SEQ
2   ERROR            SEQ
4   DISK             SEQ
3   DIR              SEQ
2   2FETCH           SEQ
4   2MATHS           SEQ
5   USEFUL           SEQ
0   ---------------- PRG
25  SEQUENTIAL       PRG
5   PRINTER          PRG
5   ERR              PRG
5   DISK.OPS         PRG
5   DIR.READ         PRG
5   2@               PRG
9   DMATH            PRG
9   USEFUL.EXT       PRG
9   TRIG             PRG ; sine &
7   SIN-COS          SEQ ; cosine
491 BLOCKS FREE.
```

⁂

PLUS 4 LIBRARY

The PLUS 4 library now boasts 10 disks. My thanks to a member in Florida for a second consignment of contributions. The disk names are: Utilities, Games, Other, Financial, Mostlymath, American1, American2, American3, American4. Original naming, isn't it? The 10th disk is a collection of 3 sequential files providing a listing of the Plus 4 RAM from Pages 0 to 7 inclusive. For those without Script/Plus a sequential file read program is included.

```
0 PLUS 4 RAMLISTS 02 2A
3    READ SEQ FILE    PRG
0    ---------------- PRG
41   ZEROPAGE LIST    SEQ
31   RAMLIST PAGE1-4  SEQ
26   RAMLIST PAGE5-7  SEQ
```

⁂

PC COMPATIBLE LIBRARY

by Tim Arnot

The PC library is available to any member who owns or uses a PC compatible computer, whether it is one of the fabulously overpriced CBM clones, or one of the cheaper brands, or even one of the 150 MByte ultra-high performance 386 jobbies.

The library consists of some 120 disks, and is available on 360 Kbyte floppies (5.25"). The library has been split into 3 parts, by subject category, each part being supplied to you by a different librarian. Additionally a directories disk is available from Pete Crowder, listing all the current titles and categories.

Normal rules for all ICPUG libraries apply here, concerning number of disks allowed per submission, use to which the software is put and so on. Remember, you don't have to have a Commodore PC to use the library.

A new disk in the library this time is disk 120, MINDREADER. This is a 'psychic' wordprocessor, which analyses your typing and suggests words and phrases for you to insert. Its all done on the fly as you type, and is great fun. It is shareware, and the publishers, Brown Bag Software, are supporting it within the UK.

On an end note, a reminder that we do only cater for 360K media at this time. If you do want the software supplied in other formats (1.2 M or 3.5" disks), a special arrangement will have to be made through me rather than the normal librarian. It would also be helpful if you supplied pre-formatted disks to save us some time while copying. I would welcome any submissions you wish to make to the library. Please send them to me for inclusion. My address is inside the back cover of the Newsletter.

⁂

128 LIBRARY

by Chris Wright.

Firstly, the librarians. Please refer to the back page of the Newsletter for the new listing. Quite a few changes. Before going on to them I would like to thank Damien McEnroe who is retiring as a librarian. Damien was in from the start of the library and has done stirling work. Many, many thanks. In the last Newsletter, I asked for a volunteer librarian and was swamped with over 40 applications. It was most pleasant to see such a response and to find that nearly all of those volunteering wished to give something back to the club. I know how they feel.

I have gained friendships, contacts, help and advice through ICPUG and as such I also am only too willing to help members. It is gratifying to see that others feel the same way. That is the spirit of ICPUG. All those who volunteered will have received a letter from me thanking them.

I will remain as organiser and copier for the Z80 cartridge and 8050/8250 copies, and will be preparing the library for 1581 format soon. All those wishing to obtain a version of CP/M on 3.5 format will have to send their original systems disk as proof of ownership, a 3.5 unformatted disk and return postage, as I am getting a version sent over from the States. (Telephone call to CBM UK: "Have you got a version of CP/M in 3.5 format?" - Reply: "Er!") What do we expect? If you want something done you have to do it yourself.

I have just finished sifting through 30 CP/M disks and will be able to make 7 good utilities disks from them. I will try to have them in the library by the time this article is out. I have also written to User groups in Canada, the States, Australia and South Africa offering to swap some of our disks for their 128 mode PD software.

I am expecting a good response here so watch the next Newsletter. After I have put these 7 CP/M disks in the library I will not be placing any more in as there is sufficient for anyone to go on now. Lazygreenus U1 is now on version 2 and there is another game added to CR2 on CP/M

***

AMIGA LIBRARY

by Pete Miles

The Amiga Library was started by Mike Todd and is roughly based on the first 30 Fish Disks. Since then the Fish disks have increased dramatically to over 80. Consequently Tom Cranstoun and I have had a rather busy time sorting through to find the best for inclusion in our library. I might as well say straight away that not all the programs have been included as we thought they weren't good enough. They are, of course, all available on the actual Fish disks if you feel inclined to plough through the lot. If that is not enough then the Amicus disks have increased to 22. That's not all. We also have to handle some 60 other disks of various parentage. Through our American associate we have access to disks from a Texas Amiga group. Most of the programs are from the Fish disks but occasionally something pops up that we havn't seen before. All in all, we have over 1000 public domain programs available for the Amiga ... but you ain't getting 'em all, yet.

Next, a word about the original categories: as the number of programs has increased, so has the potential possible categories into which they can fall. Taken to the absolute we could end up with dozens of different categories which would be very difficult to maintain and confusing for the members. Consequently, some of the original categories have been expanded to include a wider range of programs. For example the original Text category was intended to include only text-readable files. We have now broadened it to include programs to do with text per se (ie editors, spellers etc). Whatever category we choose to put a program in, someone is bound to disagree, so unless something is wildly wrong we will not enter into correspondence or phone calls about the matter.

The library has been split into two broad groups. The 'ordinary' disks which I collate and the 'developers' disks which Tom Cranstoun looks after. This last group primarily contains specialised programs aimed mainly at professional software developers, although there is nothing to stop anyone from using them. It must be said, however, that many of the programs are not stand alone but are meant to be included in a main program. The 'ordinary' group contains everything from leisure to business, utilities and communications to graphics,pictures, demos and text editors, spelling checkers, compilers and assemblers. There should be something there for everyone.

As there are so many new Amiga owners we have put together a set of 5 disks which we hope will help you get that bit more from your Amiga more quickly. This set consists of the following: Dos 1, a picture disk, an animation disk of the very latest from the USA, a utilities disk and a disk with 2 text editors. The Dos 1 disk has 18 small programs all of which will expand the usefulness of your Amiga straight away. For example there is a text reader program that lets you read any text file in easy to manage pages. It allows you to go back to the previous page and you can also ask it to go straight to a particular page. If you want to read something more than once then just go backwards until you find the page you want. To make the text display faster than usual use Blitzfonts. To stop inquisitive children and exploratory cats walking on the keyboard then Keylock is for you. Many of the programs on Dos 1 can be put in the C directory of your boot disk and so be called up straight from the CLI. Some programs such as Blitzfonts are better put in the startup sequence in the S directory of your boot disk. To help with all this we have included a help file which explains how to copy and print files.

The Amiga was designed to have a user-friendly face, ie the WIMPs environment. Many people prefer to control their Amiga from the CLI which is fine, but equally some people prefer to use the Workbench in all its pictorial glory. To this end I have started to included directory drawers on the disks. This a nice easy way in which to read files and look at programs. Furthermore, I have introduced a new disk icon that identifies ICPUG when the disk is put in the drive.

Such has been the success of the Amiga Library that our disk copiers have, at times been overwhelmed by requests. In order to reduce the pressure somewhat we have co-opted new copiers and further are limiting the number of disks requested at any one time to 5.

Finally, on what the National Committee regard a more serious note, I must mention the volume of disk collection. It has come to our notice that some members have now had all the Fish disks and library disks we have so far released. OK up to a point. What is definitley not OK is that ther eare indications that some of this public domain software has been offered for sale. This is well out of line. Public domain software is not intended for sale and the committee will do all in its power to stop this happening and if necessary take matters further.

***

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COMAL CORNER

by Brian Grainger

The main thrust of this article is to explain some of the more complex programs on Today Disks 12 and 13 which were offered in the last Newsletter.

The main feature of the 0.14 side of Today Disk 12 is the FONT'EDITOR. For some reason a NEW command has to be issued prior to loading this program, which uses the expanded memory option of COMAL 0.14.

ENHANCER-1541 is a program which would be very useful if only we in the UK could use it! It provides error messages in RAM and a beep when an error occurs. It disables quote mode and insert mode. It adds four new editing keys:

CTRL-A removes indentation in a line that extends over more than one screen line.
CTRL-K deletes all characters to the end of line.
CTRL-U moves the cursor up to the start of the line.
CTRL-L moves the cursor to the last character of the line.
In addition CTRL-V sets a white on blue screen display while CTRL-W sets another screen colouration set. The function keys (and RUN/STOP key) are defined to produce common commands and can be user defined.

Most of these facilities are similar to what COMAL cartridge owners are used to. The big problem is that ENHANCER-1541 is written in machine code and calls up SIZZLE to load COMAL. As I have mentioned in other Newsletters, SIZZLE fast loader does not work in the UK. Consequently neither does ENHANCER. I would very much appreciate a COMAL 0.14 user with machine code experience looking at ENHANCER to modify it so that SIZZLE is not used. Then we can all benefit from using it. As an incentive a free copy of one of the COMAL Today magazines will be forwarded to the sender of the most suitable modified version of ENHANCER for the UK.

BELL.PROC, DEFKEY.PROC, SHOWKEYS.PROC, QUOTE'MODE.PROC on the same disk are used in conjunction with ENHANCER.

QLINKSIMULATOR is a demonstration program of a network in the USA, (QLINK), where US Comalites have a monthly COMAL meeting on the network.

PIC FINDER will search through your disks and flag picture files created with various products such as Koala Pad, Doodle, Print Shop etc.

The various programs under the disk headings COMAL, PASCAL and BASIC are Benchmark timing programs.

MONITOR on both sides of the Today 12 disk is a set of procedures and functions to do various functions that machine language monitors normally do. I hope by reading the program you can see the facilities available. I will answer any difficulties if you send an SAE. The interesting bit about this program is that the disassembly procedures will recognise the extra op-codes of the 6510 (or at least those known about in Canada). It will also decode any code that may be 'hidden' by a BIT instruction.

Some of the procedures, eg BACK'SIDE.PROC, FAST.PROC etc are for exclusive use with the C128 to define whether in slow or fast mode and which side of the disk to use.

On the COMAL 2.0 side of disk 12 we have SIDEWAYS60, SIDEWAYS80 and two packages. Both of these files can be used to print text files sideways on a sheet of paper. This would be very useful for my Multiplan spreadsheet work but unfortunately it only works with a Gemini 10 or compatible printer.

Similarly PKG.OKI192, which modifies the screen dump routines to work on non Commodore printers, only works with the Okidata 192 and compatible printers. There is no need to say more since not many of you are likely to use that printer.

PKG.RABBIT is much more interesting. It can be used to fastload COMAL programs as well as a few other useful facilities. It works on a 1541 only and may not be used with fonts loaded or linked. The package uses memory at $7000-$7ccb and reduces the program space to 26618 bytes.

USE rabbit - initialises the package to provide the following commands. An automatic initialisation occurs when first LINKed.

BREAD(<track>,<sector>,<buffer>,<string$>)
Block read from the track and sector specified using the specified buffer into <string$>, which is a 256 byte string.

BWRITE(<track>,<sector>,<buffer>,<string$>)

Block write to the track and sector specified using the specified buffer from <string$>, which is a 256 byte string.

SETFAST(<mode>)

Sets up fast reading and writing if <mode> is TRUE.
Disables fast reading and writing and BMODE if <mode> is FALSE.

FAST

Returns the current mode setting of SETFAST

SETBMODE(<mode>)

Sets fast block reading and writing if <mode> is TRUE.

BLOCKMODE

Returns the current mode setting of SETBMODE.

SETROMMED(<mode>)

If <mode> is TRUE the pcakage cannot be discarded or saved with a program.

ROMMED

Returns the current setting of SETROMMED.

SETDEVICE(<device number>)

Sets the device to be used.

DEVICE

Returns the current device number.

TRACK

Returns the next track number based on the last sector read with BREAD.

SECTOR

Returns the next sector number based on the last sector read with BREAD.

RDERR

Reads the error number for the last read/write operation.

Finally on the COMAL 2.0 side of disk 12 users of HI will note it refers to a

program WHEEL'OF'FORTUNE. Lack of space precluded the program going on the disk so do not select that option. The program can be found on Disk 13.

The 0.14 side of disk 13 has DISK'EDITOR as its main feature. This needs expanded memory in order to run. After running DISK'EDITOR you will be asked to give a track and sector number to display. Having done so the first half of the sector will be displayed. Pressing 'I' when any sector is displayed will display the Information (Help) screen. This gives a brief summary of all the disk editor commands. Press any key to return to the sector display.

On the 2.0 side of disk 13 two programs are worthy of note. First, PROC.COPYSCREEN will copy a text screen to the graphics screen. What use is that you may ask. Well if you are using a customised font a text dump will still print the standard characters and not the customised characters. The solution is to transfer the text screen to the graphics screen with COPYSCREEN and then do a graphics dump.

PKG.C128 is extremely useful for owners of a 128. When LINKed the 80 column screen and numeric keypad are intitialised.. The package uses the cassette buffer so a disk drive is essential for file transfer. The 80 column screen is for output only. You can print text to it by sending it to device 7.

LISTu7: will list the program to the 80 column screen.

ATTRIBUTES(<alt>,<rvs>,<underline>,<blink>)

Sets the attributes of subsequently printed characters. The appropriate attribute is set with '1', cleared with '0', or left as it is with '-1'.<alt> sets the alternate character set. The others are self-explanatory.

BACKGROUND80(<red>,<blue>,<green>,<bold>)

Sets the 80 column screen background colour. '1' will set the appropriate parameter. '0' will clear it and '-1' will leave it as it is.

COLOR80(<red>,<blue>,<green>,<bold>)

Sets the 80 column screen foreground colour. It works similar to BACKGROUND80.

DISPLAY80(<topline>,<no'of'lines>)

This is used to define which lines of the 80 column screen to display to. It can be regarded as a sliding window. The number of lines displayable is dependent on the monitor used. The command allows a maximum of 50, well beyond the range of most monitors.

HARDCOPY80(<output'loc$>)
Sends the 80 column screen to the required output location. The location can be a printer (lp:), 40 column screen (ds:), modem (sp:) or disk file.

PAGE80
Clears the displayed area of the 80 column screen and puts the cursor at top left. It also resets all attributes.

MONOCOLOR80(<mode>)
If <mode> is TRUE then all attributes will be disabled and the text space will be doubled. In this mode COLOR80 changes the colour of ALL printer characters not just the ones printed following the command.

SWAPFONT80
Sets characters set 2 in monocolor mode. To reset to character set 1 then INIT80 must be used.

CURSOR80(<row>,<column>)
Positions the cursor relative to the current DISPLAY80 setting. a parameter value of '0' means use the current row or column.

PRINT80(<row>,<column>,<text$>)
Prints <text$> on the 80 column screen at starting position <row>,<column>.

CURCOL80
Returns the value of the 80 column screen cursor column position.

CURROW80
Returns the value of the 80 column screen cursor row position.

TURBO(<mode>)
When <mode> is TRUE sets up fast mode of the 128, and turns off the 40 column screen. Disk access with the turbo activated may lock up the computer.

KEYPAD(<mode>)
The default setting of <mode> is TRUE which enables the keypad but slows down program execution. Use <mode> equal to FALSE to disable the keypad.

SET80(<register#>,<value>)
Places the given <value> in the VDC register specified.

READ80(<register#)
Returns the value in the VDC register specified.

INIT80
Restores registers to power up values, clears VDC memory and writes both character sets to VDC memory.

All of the above information concerning the programs on the Today disks has been condensed from COMAL Today Issues 12 and 13 from the US COMAL Users Group Ltd.

The COMAL news in the past couple of months has been a bit disappointing. Mytech, who were working on a cheaper PC version of COMAL and rumoured to be thinking of an Amiga version, seem to have gone into hibernation. The US have heard nothing from them and seem to regard the likelihood of such COMALs as slim. They do however suggest someone else may be working on an Amiga COMAL but no details are given. The US COMAL Users Group Ltd. seem to be reducing their output as their staff is now down to being solely Len Lindsay. In addition I noticed less response to the new COMAL disks than is normal. Perhaps the rot has set in!

On a brighter note the US COMAL Users Group are now advertising an expanded COMAL 0.14 with a runtime system option. Some people prefer to call the latter a compiler but as they do not speed up program execution I try to avoid that term. What they do is create a stand-alone file which can be run without the need of the original COMAL 0.14 disk. In addition programs cannot usually be listed giving a measure of protection if required. Very useful. I am not sure how feasible it is to get a copy here in the UK since in the past the US have been careful not to supply COMAL outside the US.

That's about it for this time. Happy COMALing!

***

DISCOUNT CORNER

A Happy New Year to everyone and success to your computing endeavours in 1988.

General Information

Many of our discount offers are applicable only to UK members. If you are an overseas member please contact me before placing an order for items listed within this area. The Discount Corner is where you will find the names of companies or products that can be purchased at less than recommended retail prices. We do not provide lists of items available at discounts. The Discount Corner is our list. Telephone queries are preferred to written ones they receive attention first. If you wish to write please state your home phone number (AND membership number). Please make your calls after 8.30 pm and before midnight. If I should not be available then please leave your name, phone number, date and time of call and brief information - I will call you back later.

CBM HARDWARE is available to members at discount rates. Call for details.

Adamsoft - contact David Tomkinson, 18 Norwich Ave, Rochdale, Lancs OL11 5J2, allow members discounts of 20% on ABACUS (64 & 128) and 10% on many other products including Compute books, 1351 Mouse (£29.95 net) and Supersoft products. Call David on 0706-524304.

Amiga Centre of Scotland - contact Martin Lowe, 4 Hart Lane, Edinburgh, EH1 3RN allow a small discount to members on certain products. They are now distributing the Ray Tracer Newsletter at £8.00 per issue. Publications available include Amazing Computing (£3.50 per Issue) and Ami Project (£3.00 per issue). Floppy disk accelerator FACC II is now available at £24.00 inclusive. Martin's phone number is 031 557 4242.

Ariadne Software Ltd of 273 Kensal Road, London W10 (01-960 0203) will supply their Kickstart Guide to the Amiga to members at £9.50 plus £1.00 towards postage and packing. They will supply their famous GENLOCK program to members at 10% discount.

Bargate Computer Services - contact Peter Cartwright, 101 High Street, Burton on Trent, Staffs DE14 1LJ are offering 25% discount on the Accountability fully integrated Accounting program. This is available for the C128 and 8000 series PETS -retail price including VAT £99.99. When the invoicing pack is included the retail price is £124.99 - 128 edition only at this time. Other products available include Citizen and Star printers. See their advert in this issue or call Peter on 0283-510249.

Biblios Publishers Distribution Ltd., of Star Road, Partridge Green, Nr. Horsham, West Sussex RH13 8LD will supply members with copies of Rae West's famous book PROGRAMMING THE COMMODORE 64 at £5.00 each including postage and packing. Please quote membership number and your name and address.

Bitstream Publications produce the 'Commodore 128 Companion' written by our own Tim Arnot. Cover price £9.95 but to members its £4.95 plus 50P UK or £1.00 overseas postage and packing. A4 size beermats are now £2.95 or £3.49 for 11 x 14 size. Available with Amiga DOS/Guru's, Amiga Ed/Edit, Amiga Errors/Prt: codes and MSDOS information. You may deduct 10% from your total order value when you quote your 1988 membership number on your order. Send your cheque and details to Flat 3, 26/28 Osborne Road, Southsea Hants PO5 3LT.

Brain Boxes, Unit 3G Wavertree Technology Park Liverpool L7 9PF ('phone 051-220 2500) allow 15% discount on their products. Their IEEE switchable interface, their RS 232 interface and their user port to centronics printer cables are suitable for both the 64 and 128 machines. Other products include the PSI box (Parallel - Serial RS232 - IEEE) and PC to IEEE transfer box.

Bytes & Pieces - contact Chris Wright, 37 Cecil Street, Lytham, Lancs, FY8 5NN offer 10% discount to members on most of their products, see their advert in this issue or call Chris on 0253 734330 .

Cassel plc will not in future be able to supply COMPUTE books. Try Adamsoft.

Cavendish Commodore Centre - see their advert in this issue - allow members 10% discount on all items stocked. Contacts Malcolm Sargent or John Broad.

Compunet continue to offer special modem/subscription packs for 64/128 & Amiga models. Write to them (Compunet Teleservices Limited) at the Sheraton Business Centre, Wadsworth Road, Perivale, Middlesex, UB6 7JB for their good news.

Consup Ltd of Lyntad House, Finck Street, Off Upper Marsh, London SE1 7EN offer a pack of 5 Disk Mailers (5.25 inch) at £4.00 inclusive of VAT, postage and packing. Order direct or phone Tad on 01-928 3252 for more information.

DB Electronic Services of 205 Meadgate Avenue, Great Baddow, Chelmsford, Essex, CM2 7NJ (0245 260874) offer a repair service for most Commodore machines and printers. Call Dave Barber for more information.

Database Software - see their advert in this issue - have made available to members Mini Office II at £16.95 on disk or £13.95 on cassette. This represents a saving of £3.00 per program. Place your order through me making your cheque out to Database Software Ltd and endorsed on the rear with your address and membership number. Please include your written order to me and an 18P stamp.

ENIGMA. This new publication seems to have stopped at edition number one. Those of you who paid £20.00 for 14 issues at the PCW Show would seem to have paid £20.00 for one issue. Maybe you should contact the trading standards officer in Southsea and lodge your complaint officially with him.

Tony Firshman Services 12 Bouverie Place, London W2 1RB (01-724 9053) offer members their mains cleaners at £17.10 for the 3 way adaptor and £22.80 for the 4 way trailing socket. Quote your membership number when ordering direct.

LAN Computer Services Ltd., specialise in Amiga and Commodore PC equipments. See their advert in this issue.

LOAD-IT of 35 Stretton Road, Shirley, Solihull, West Midlands, B90 2RX (021-745 4970) allow members a reduction of £3.00 on their product when fitted by them or £1.50 reduction if the kit is purchased. Call Brian Cattlin for details.

Microtext of 7 Birdlip Place, Horndean, Hants PO8 9PW will supply members with their Teletext adaptor at £64.95 and their TV tuner with the teletext adaptor at £107.80 both prices including post and packing. 128 owners will require a special cable which is not discounted.

Perfect Fourth Software of 11 Otters Brook, Buckingham, MK18 7EB allow 10% discount to members off the RRP of their program Aural (See their advert in this issue). Please quote your membership number when ordering.

Precision Software Ltd allow members on direct application a discount of 25%

on their own software (only 10% on 64 & 128 Superscript, Superbase & Super Disk Doctor). Other products are subject to 10% discount. Please state your membership number when calling them on 01-330 7166 or writing to them at 6 Park Terrace, Worcester Park, Surrey KT4 7JZ - they accept some credit cards. STOP PRESS. A special limited offer to members. The PSL 4010 fast, 480 cps, printer at only £299.00 including VAT net to you.

The Queen's Armes Hotel in Charmouth, Dorset have agreed to continue their offer of 10% to members. This discount is from their standard daily rates for the 1988 season. For details call Peter Miles on 0297-60339. This Hotel is Ashley Courtney and ICPUG recommended.

Sentinel Software of Wellington House, New Zealand Avenue, Walton on Thames, Surrey KT12 1PY will supply members with WORD PERFECT for the Amiga at a discount of 30% from the current RRP of £228.85 and will allow a further reduction of £50 if an original copy of Scribble 2.0 is sent with your order. All orders should be marked for the attention of Sandy Wall.

Supersoft of Winchester House, Canning Road, Harrow HA3 7SJ have offered special prices to members for PET 2 plus 4 upgrades (down from £65 plus VAT to £49 plus VAT) and for 3040 upgrades to 4040 - 2.2 DOS - (down from £55 plus VAT to £39 plus VAT). The offers close in April. Call Peter Calver on 01-861 1166 for details.

Transactor is to be published in the UK under licence from Canada. Naturally enough the publishing company is called Transactor (UK) Ltd. The address is Unit 2, Langdale Grove, Bingham, Notts NG13 8SR and your contact is Dave Beatty on 0949-39380. The price for either publication, Transactor or Transactor Amiga, will be £2.50 each and the quality will match that of the North American publication. There will be UK advertising within the magazine.

Transworld Publishers new prices are £12.00 for the C128 Programmers Reference Guide and £12.80 for the AmigaDos Manual first edition. Second edition is not available. Send your cheques (made out to Transworld Publishers with your membership number & address on the rear) to me with your order and an 18P stamp.

Viza Software Ltd., 54 High Street, Maidstone, Kent ME14 1SY (phone 678169) offer Vizawrite £25.97 (£32.47 on Cartridge), Vizastar XL4 £32.47 or XL8 £38.97 - all for the C64. Vizawrite Classic and Vizastar are available for the C128 at

£38.97 and £51.97 respectively, both include cartridge & disk. Vizawrite for the PC including spelling checker is £48.72 . Viza's Desk Top for the Amiga is £65.00 . All these prices are net to members. Please send your orders to me enclosing a cheque made out to Viza Software Ltd (endorsed on the rear with your address and membership number) plus an 18P stamp.

John Wiley & Sons of Baffins Lane, Chichester, Sussex PO19 1UD allow discounts of 20% to 30% (on their books & software). Contact Miss Huff on 0243-784531 .

Y2 Computing who are now at 111 St. Albans Road, Watford, Herts WD1 1RD, offer 15% on all their products except their program Ruby Comm for the Amiga on which they offer a special price - call me for this price.

COMPUNET discount pages - GOTO 326989. CLUBSPOT discount pages 810213204.

Special Notice

A.W.Software of Lincoln are reported by a member to be supplying pirated software. This company has been advertising in PC Weekly during the last few weeks.

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LAST MINUTE FILLERS

For Sale

PET 3032 computer; 2031 disk drive; 2023 printer; Visicalc software, and more. little used. Offers. Tel 01-508 6990

COMMODORE 8096 computer; comms. chip; Silicon Office board; Prism acoustic coupler; 8050 disk drive; database/wp package; WP4+; 8032 + 8096 Visicalc packages. Complete with all manuals and original disks. £300. Separate deal: 3032 computer and cassette drive £65. Tel (0245) 350621 (Chelmsford - office hours) 361073 (after 6pm)

2 COMPLETE Plus4 outfits, c/w tape deck, joystick and about 25 games each. £50 each. 1551 disk drive, fully working with 40 disks. £90 ono. 5 Infocom disk adventures £15 each or £60 the lot. 5 cartridges (games and script/plus) £10 each. Adam Marshall. Tel (0980) 46524 (Shipton Belllinger after 6pm)

READERS WRITE . . .

Due to the large content of this Newsletter (120 pages) and the very large amount of Ads, we've only enough room for one letter. More next time.

AN UNDERLINING PROBLEM

Capt. W Richie, 21 Signal Regt., RAF Wildenrath, BFPO 42 has problems emphasising.

Judging by the Editor's comments in the Sept/Oct Edition he feels the READERS WRITE section is becoming something of a HELP SCREEN, but I have a problem concerning the use of Vizawrite Classic (VC) and my Citizen 120D printer, and there appear to be no Vizawrite helpers in the Help Register.

I have been using VC for some time now along with a Citizen 120D printer which is chained off my 1570 Disk Drive. The printer is fitted with the Citizen Commodore BIP interface. I am delighted with both VC and my printer. As a word processor package VC is excellent, and I also find the 120D to be a good reliable and versatile printer. The only problem I am currently experiencing is that it does not appear to be totally compatible with VC, and try what I may, I cannot get it to underline. I have tried all the various settings available within the software, and every option I can think of on the switches on the printer interface; but all to no avail. What makes matters more confusing is that I can get my printer to successfully underline with various other word processor packages - including Vizawrite 64!

I have written numerous letter to Viza and they are equally as baffled a I am. So much so they have invited me to visit them so that they can try to sort out my problem. Whilst I am delighted at their offer, being stationed in West Germany does not make it a financially sound proposition - although I have said I will visit them the next time I return to the UK.

Is there anyone using a set up like mine who can give me some advice? With only two years experience in the micro world, I can hardly claim to be an expert, and I have a feeling that the root cause of my problem is something silly, and that the answer is probably staring me in the face. I would be grateful for any advice whatsoever on this subject.

Turning to other matters, I, like other members of ICPUG, have noticed a great increase in the amount of AMIGA articles in the Newsletters - they now appear to occupy at least half of each volume, which is interesting considering that AMIGA owners represent only a small percentage of the ICPUG membership. I suppose that we non-AMIGA owners must, however, accept that ownership of this highly rated machine will continue to grow, and no matter how faithful we are to our, by AMIGA standards, dated systems we cannot turn back the clock and inhibit the progress of sixteen bit machines. Bemoaning the lack of articles on 64's/128's, or whatever, is not, however, the answer to our problem. The answer lies in our own hands. If the small minority of AMIGA owners within ICPUG can produce half a Newsletter full of information, what are the silent majority doing? I suspect that many, and I include myself as a guilty party, are fearful of writing an article because they feel they do not have the technical knowledge to do so; but quite often one does not have to be an absolute expert on a subject to produce an interesting, and indeed, useful article for consumption by the general membership. I quote, as an example, Peter McDonald's article on VIZASPELL HINTS in the Nov/Dec 1987 Newsletter. It is a well written, useful and informative article on a non-technical subject. It certainly expanded my knowledge on the use of VIZASPELL, and I thank Peter for it. So the message is, it's up to us non-AMIGA users to help ourselves. There are thousands of us all using differing types of software, and hardware; and even if we don't understand the internal workings of the 8502 microprocessor we could probably produce something interesting. My goodness, I might even bore everyone to death and have a go myself!

Keep up the good work ICPUG. I look forward to every Newsletter, and read them avidly from cover to cover - even the AMIGA articles. Who knows, in a years time, and if I save my pennies and can convince my wife, I might be able to sneak down to the local Commodore dealer and...!

FOR SALE AND WANTED

For Sale

GRAPHICS WITH COMAL book, for sale or loan for a few weeks. R McInally, 32 Canmore Gardens, Kirkcaldy, Fife, KY2 6XR, tel (0592) 201717

COMMODORE MPS1000 printer; printer cleaning kit; ribbons; Easy File for 64; Total Health; Polls Winner; Logo; Critical Mass. £160 the lot. Tel (0245) 283215 (Helmsford)

C128; two 1541s; C2N, computer desk (metal); 11 books; cartridges, including: Freeze Frame, Fastload, Expert; 500 magazines. £450 ono. Tel (0705) 693379 (Portsmouth) or (021) 459-4528 (Birmingham)

COMMODORE 64 computer with C2N Datasette £100. CBM MPS801 dot matrix printer £70. Superscript 64 £20. Easy Spell £10. Micro Swift £10. Mini Office II £10. 64 Doctor £5. All disks and originals. On tape: Superfont £3; Infotape database £3; Mini Office I £3; Music Maker 128 + keyboard overlay £15. Games: Caesar the Cat £4; Hovver Bovver £3. Books: C64 Programmer's Reference Guide £5; C64 - Getting The Most From It £4; Easy Programming For The C64 £3; Software 64 £3; Business Applications For The C64 £3; The Working C64 £3; Teach Yourself C64 Computer Programming £1.50. Michael J Hulme, 19 Brook Road, Bomere Heath, Shrewsbury, SY4 3PU, tel (0939) 290516

SUPERSCRIPT 64, Flight Simulator II, Amiga Textcraft V1.1, "Programming The 64" (RC West). All Mint. Offers to Ian, tel (0232) 617482

1541 DISK DRIVE, little used but has developed minor loading fault, presumably out of alignment, hence £60. Ian Landless, Ballena, Weywood Lane, Farnham, Surrey, tel (0252) 22048

BC BASIC by Kuma (cart); 64 Assembly Language by Dr Watson (tape); Superbasic by Interceptor (disk); Audiogenic Forth (cart), Turbo Disk (ROM), Advanced Cassette Op System (tape); MicroSwift spreadsheet (disk). All with manuals. Tel John Sharp (0799) 40768 (Newport - evenings)

2031 DISK DRIVE (second series) complete with leads and manual £95. PET 2032 and Datasette, with Toolkit, soundbox, Centronics interface and various books (works, but monitor needs attention). Offers please to Alan McCombe, 17 Claverton Road, Saltford, Bristol BS18 3DW.

CBM64/1541/MPS801/DPS1101; tape deck; 2 joysticks; light pen; Dolphin Dos (fast!) - all in original boxes and in excellent condition. SOFTWARE incl. S/Script; Speech; White Lightning; Laser Compiler; Oxford Pascal; Circuit Analysis; Public Domain & Games (30+ disks). BOOKS inc. Programmer's Ref. Guide and several on M/Code. Cost £1000 ne, will accept £600 for the complete sytem. Mike Addlesee, Leckhampton House, 37 Grange Road, Cambridge, CB3 9AU, tel (0223) 351519 (Cambridge, evenings)

CBM 64 WITH DATASETTE + 5 cheapo games £100 ono. CBM green monitor £50 ono. CBM 1520 printer plotter £50 ono. Competition-Pro joystick £10 ono. Quickshot2 joystick £5. Large range of software (including books) covering utilities, languages, spreadsheet and games, please send SAE for details. Tape carosel with 15 tapes £5. MFI computer desk £10. G Timberlake, 114 Chesford Road, Stopsley, Luton, Beds LU2 8DR, tel (0582) 423120 (evenings or weekends)

COMMODORE 500 computer, brand new, £50. Delivery possible. Tel Phil Hadfield (0622) 59754 (Maidstone - evenings)

COMMODORE 128 + 1571 drive £270. 1901 monitor £150. MPS 803 printer £60. Centronics i/face £15. RS232 i/face £15. EPROM programmer (+ s/w + 64 m/c monitor) £30. CP/M User's Manual + utility s/w £15. Dbase II (128) £60. Simply Write (64) £15. Assorted 64/128/1541/1571 books £25. Most in original packaging with all user and service manuals. All the above + 20 disks + s/w + info £575. Tel (0582) 662375 (Dunstable - after 7pm or w/ends)

AMIGA SOFTWARE: Defender Of The Crown £18. Uninvited £18. Guild Of Thieves £14. Hollywood Poker £12. Barbarian £14. Raymond Lan, 2 Knowle Road, Burley, Leeds, LS4 2PJ

COMMODORE 128D; twin 1571 disk drives; monitor; Centronics interface (8k buffer); mouse; much software including: Superbase/Superscript, Pascal, CP/M, games, utilities, and books. Excellent condition and well wort over £1000. A gift at £450 ono. Tel Brian Medway 669771 or Meopham 812523

C64/1541/MPS801/1701 monitor; tape deck; joystick; Brainbox; Chatterbox; Final Cartridge. Software: Vizawrite; Superscript; Superbase; Simply File; Calc Result; Polynomial; 64-Statspower. Books Included. Cost £635. Will accept £500 for complete system or split individual items. Tel (0304) 830523 (Shepherdswell - after 10pm)

C128 (10 months old); 1541 disk drive; DPS1101 daisywheel printer; 80-col green screen monitor (10 months old); Superscript 128; some books. All items in excellent condition and boxed. £575. Malcolm Tatton, Firfield Cottage, The Hurst, Biddulph, Stoke-On-Trent, ST8 7RU, tel (0782) 522000 (daytime) 518991 (evenings)

C64 SOFTWARE (ALL DISK): SuperForth + AI & Maths Extns, PAL Assembler, Comal 2.0 (Cart), Comal Packages (+ book), Practicalc II s/s, Pitman Typing Tutor, Brainpower Decision Maker & Entrepreneur, Doodle, Peripheral Vision, Advanced Art Studio, Advanced Music System, Quill Adventure Gen., Paperclip w/p, Petspeed Compiler, Micro-Swift s/s, Calc Result Advanced s/s (Cart), CBM Assembler Package, CBM Assembler Tutor, Pascal 64 (Abacus), VIP Terminal (Comms.), Powerplan s/s, GEOS, GEOFile, Writers Workshop, UK Fonts. Games: Sword of Fargoal, Jumpman. C128 SOFTWARE (DISK): SwiftCalc s/s. HARDWARE: Atari Trackball (C64 Compat), Kempston Comp-Pro Joystick, CBM 1541 Drive (+ Games Disk & Future Finance), Dacom Buzzbox Modem (300 baud), Compunet Modem (+ software & Colossus Chess, Elite). BOOKS: Too numerous to list (many Forth, Comal, Assembler). Please call or write for list. Offers: Mike Rose, 103 Ferney Road, East Barnet, Herts EN4 8LB, tel 01-439 9310 (daytime) 01-368 6645 (evenings/weekends)

COMMODORE 64; Datasette; Music Maker (incl keyboard); Sound Sampler; Drum Machine; Software (worth £60); Quickshot Joystick; Joyball; 50 games and utilities. £160. Tel Darryl, (07072) 68794 (Hatfield - evenings)

SOFTWARE SURPLUS to requirements: Micro Modellor for 8096 £100. Visicalc for 8032/8096 £50. Offers considered. Colin Pearson, Rushton House, Nantwich Road, Audley, Stoke-On-Trent, ST7 8DL, tel (0782) 720753

I AM ALMOST GIVING away a Star SR15 132 column printer. 200cps and NLQ, semi-automatic paper feeder, just over a year old. Normally £500-plus, but I am selling it for £270, and I will throw in over £500's worth of new printer ribbons. Got to be a bargain. Tel (0253) 734330 after 7pm please. Can Take Visa and Access.

MICROCLERK 128 £40. CAD pack 128 + lightpen £25. (0224) 586622 (Aberdeen - after 7pm)

BIG BLUES READER. Offers please to Jeff Perry, tel 01-642-5380

COMMODORE MPS801 printer (boxed, hardly used) £90. R Renjel, tel (work) 01-600-0321 extn 222; (home - after 6pm) 01-540-5481

AMIGA: COMPUTE!'S Amiga Applications £9. Karate Kid II £8. Both as new, incl P&P. John Farrar, 2 Marsh Lane, Hayle, Cornwall, TR27 4PS, tel (0736) 752982

BOOKS, BOOKS, BOOKS! I have a large number of Commodore-related books which are taking up 20 feet of shelf space. These are mainly for the C64, but there are some for the C16 and other PET machines and also a few software items. For the full list of the 150 or so books, send an SAE to: Mike Todd, 27 Nursery Gardens, Welwyn Garden City, Herts AL7 1SF

MPS802 PRINTER, V.G.C £120. Currah Speech synthesiser (never used) £10. EasyScript £10. Intro to BASIC I&II, Computer Studies, Caesar's travels & 20 disks £10. Tel (0622) 676354

CBM64: Swanley Tapeman 1B i/face (unused) £5. CBM Joystick 1311 (unused) £5. Tapes: Maths 'O' level rev. £5. Cash Controller £2. Alien Rescue £1. Snooker £3. Pools Winner £3. Tasword (80-col) £5. Micro-Wordcraft (40-col) £5. Micro-Swift £5. Books: Games 64 (BASIC) £1. Easy Programming 64 (BASIC) £3. Business Applications 64 (BASIC) £3. Beginners Guide To Micro-processors And Computers £1.25. Introduction To BASIC Programming Techniques £1.25. Software 64 £2.50. Please add 50p towards P&P up to 5 items. Over 5 items postage free. J Jones, 3 Vicarage Lane, Gresford, Wrexham, Clwyd, LL12 8UW

Wanted

1571 DISK DRIVE in good working order. John Whitley, 19 Primrose Bank Road, Edinburgh, EH5 3JQ, tel: (evenings) (031) 552-2085; (day) (031) 553-8382

FINAL CARTRIDGE Mk II or earlier. Must have Centronics type printer driver. Buy, or swap with serial driver only plus cash adjustment. Bert Ralfs, 67 Meadow Lane, Liverpool L12 5EB, tel (051) 226-4212

BOOKS ON PROJECTS to build for CBM64/128; Grafpad II; Speech Synth; Rainbow Disks; Xetec Supergraphix Senior i/face; Artic Fox for C64. Douglas Jakobsen, Munkegata 11, N-0656 OSLO 6, Norway.

PET DATABASE & spreadsheet or database program (3032/4032 disk-based) able to run records and accounts for a scout troop (not a lot of money but several separate accounts). Attempts to manufacture same leading to insomnia and potential divorce. Would consider a commercial package, but cost is imperative so perhaps secondhand. Phil Brookfield, tel (0925) 54660 (Warrington)

'A' LEVEL maths program, m/c assembler program (disk tape or cart), 1520 plotter, Z80 cartridge. William McGill, Rose Cottage, Main Street, Arrochar, Dunbartonshire.

8096 HARDWARE: Centronics or RS232 interface box and 8250 disk drive. Software: Pegasus accounts, Administrator 96 database, Calc Result, Wordcraft. Colin Pearson (see above)

COMMODORE 128 kit for youth centre. Tel 01-998 8014

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and deduct 25% from above prices

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Sage PC Learning Software

Serious Software for 64 and 128

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340	Jul	Amiga - Superbase Personal	Todd
549	Nov	Amiga - Superbase Personal - frustrations	Todd
545	Nov	Amiga - Transactor for the Amiga in 1988	Clay
350	Jul	Amiga - Transformer	Grainger
568	Nov	Amiga - TRIPOS - origins	Todd
148	Mar	Amiga - TYPE command with options H & N	Todd
319	May	Amiga - virus WARNING	Kennedy
547	Nov	Amiga - virus WARNING	Grainger
558	Nov	Amiga - WordPerfect - review	Kennedy
351	Jul	Amiga - Workbench customisation	Grainger
546	Nov	Amiga - Workbench startup speed	Grainger
149	Mar	Amiga - Workbench v CLI	Todd
353	Jul	Amiga - Xicon notes	Grainger
111	Mar	Amiga at Hanover	Grainger
43	Jan	Amiga Watch	Todd
147	Mar	Amiga Watch	Todd
340	Jul	Amiga Watch	Todd
549	Nov	Amiga Watch	Todd
166	Mar	AmigaBASIC - comments on	Grainger
449	Sep	Analyze! V2 (Amiga) - review	Miles
377	Jul	Anatomy of The Commodore 128 - book	Hauke
474	Sep	Artist 64 - review	Wright
457	Sep	Automated Office - guidelines for	Hunt
133	Mar	Automenu program - automatic disk menu generation	Tanner
34	Jan	Autosave program - save with new version number	Tanner
204	Mar	Basicode - version 3 continues	Bentley
415	Sep	Bible available on disk	
522	Nov	Bible on disk - distributor	Kennedy
230	May	Big Blue Blues	Oliver
373	Jul	Big Blue Reader (C128/IBM transfers) - review	Velleman
485	Sep	Big Blue Reader - errata	Velleman
571	Nov	Bill's Bulletins	
529	Nov	BOOK - 1541 Repair & Maintenance Handbook	Kennedy
377	Jul	BOOK - Anatomy of the Commodore 128	Hauke
379	Jul	BOOK - Commodore 128 BASIC Programming Techniques	Hauke
54	Jan	BOOK - Commodore 128 Companion	Kennedy
378	Jul	BOOK - Commodore 128 Ref. Book for Programmers	Hauke
313	May	BOOK - Inside Commodore DOS	Kennedy
315	May	BOOK - Kickstart Guide To the Amiga	Kennedy
377	Jul	BOOK - Mapping The Commodore 128	Hauke
529	Nov	BOOK - Science & Engineering for the Commodore 64	Kennedy

152	Mar	Brain Boxes IEEE interface with COMAL	Chastney-Parr
29	Jan	Brain Boxes Interface - experiences with	Kennedy
501	Sep	Brian's Blunderings - 80 column text in BASIC	Fowler
61	Jan	Brian's Blunderings - Amiga & MPS1000	Fowler
390	Jul	Brian's Blunderings - C64 data transfer	Fowler
390	Jul	Brian's Blunderings - RS232 and the Amiga	Fowler
255	May	Butcher - review (Amiga pic manipulation)	Grove
570	Nov	Butcher - review of V2.0 upgrade	Annal
600	Nov	Buying Abroad - easy payment method	Bailey
129	Mar	C128 - 128PLUS chip	Kennedy
32	Jan	C128 - 80 column display on a TV	Clewlow
205	Mar	C128 - 80 columns on TV - mods to TV!	Jeffs
34	Jan	C128 - Autosave - save with new version number	Tanner
402	Jul	C128 - bulletin board available	
58	Jan	C128 - displaying permanent message on screen	Copperthwaite
289	May	C128 - Dolphin DOS - review	Broad
292	May	C128 - keyboard reconditioning by Supersoft	Oliver
293	May	C128 - keyboard reconditioning DIY	deGlanville
580	Nov	C128 - music and the C128	Baldwin
373	Jul	C128 - PC data transfer (Big Blue Reader - review)	Velleman
128	Mar	C128 - ROM fixes	Kennedy
81	Jan	C128 - software library - disks available	Griffin
500	Sep	C128D - cost reduced version	
625	Nov	C16 - RAM increase to Plus4 size offer	Sochanik
137	Mar	C64 - Cold/Warm starts	N-Gloucs-Grp
9	Jan	C64 - Design and History	Harvey
287	May	C64 - Dolphin DOS - review	Moran
250	May	C64 - GEOS - applications disks (see REVIEWS)	Massey
18	Jan	C64 - GEOS - review	Massey
200	Mar	C64 - overloading the bus	Halliwell
533	Nov	Calling all PET owners	Griffin
213	May	Cassette drive problems - test program	Kennedy
31	Jan	CBUG - Chicago group for 700 users	Kennedy
383	Jul	CEEFAX REMIX - demo on Compunet	Grainger
388	Jul	COBOL for C64	Grainger
31	Jan	COBOL SIG - anyone interested?	Kennedy
65	Jan	COMAL - 0.14 - 12 disks available	Grainger
335	Jul	COMAL - 0.14 - disks CT10 & 11	Grainger
602	Nov	COMAL - 0.14 - disks CT12 & 13	Grainger
496	Sep	COMAL - 0.14 - progs converted for cassette	Grainger
65	Jan	COMAL - 2.01 - 15 disks available	Grainger
335	Jul	COMAL - 2.01 - disks CT10 & 11	Grainger
602	Nov	COMAL - 2.01 - disks CT12 & 13	Grainger
447	Sep	COMAL - 2.10 - Amiga MSDOS version	Grainger
174	Mar	COMAL - Amstrad version from Denmark	Grainger
174	Mar	COMAL - C128 cartridge from Denmark	Grainger

174	Mar	COMAL - C64 cartridge from Denmark	Grainger
491	Sep	COMAL - COMAL Today disks 10 & 11 - notes on	Grainger
328	Jul	COMAL - COMAL Today disks documentation	Grainger
326	Jul	COMAL - Dutch developments (CP/M & Mitech)	Grainger
329	Jul	COMAL - Kaprekar's constant - program	Grainger
174	Mar	COMAL - MSDOS version from Denmark	Grainger
326	Jul	COMAL - PC version - no announcement	Grainger
174	Mar	COMAL - PC version from Denmark	Grainger
328	Jul	COMAL - PROG'RAM documentation	Grainger
327	Jul	COMAL - random file bug	Grainger
332	Jul	COMAL - Standardisation meeting (Apr87) - report	Grainger
536	Nov	COMAL - Standardisation meeting (Sep87) - report	Grainger
174	Mar	COMAL - Turtle TURNTO routine	Grainger
491	Sep	COMAL - UniCOMAL product prices	Grainger
152	Mar	COMAL - use with Brain Boxes IEEE interface	Chastney-Parr
66	Jan	COMAL - VAL/STR emulation functions (0.14)	Grainger
64	Jan	COMAL - versions available	Grainger
174	Mar	COMAL - versions for other machines	Grainger
63	Jan	COMAL - What it is & how to get it	Grainger

63	Jan	Comal Corner	Grainger
326	Jul	Comal Corner	Grainger
491	Sep	Comal Corner	Grainger
332	Jul	COMAL Soliloquy	Grainger

319	May	Commodore - no longer handling software	Kennedy
379	Jul	Commodore 128 BASIC Programming Techniques - book	Hauke
54	Jan	Commodore 128 Companion - book	Kennedy
378	Jul	Commodore 128 Ref. Book for Programmers - book	Hauke
230	May	Commodore to IBM conversions - perils of	Oliver

402	Jul	Comms - bulletin board for C128 software	
577	Nov	Comms - CompuServe - description	Clay
577	Nov	Comms - QuantumLink - description	Clay
577	Nov	Comms - some US networks	Clay
577	Nov	Comms - StarText - description	Clay
577	Nov	Comms - US Bulletin Boards	Clay

317	May	Compunet - comments on	Kennedy
85	Jan	Compunet - discount details	Bickerstaff
394	Jul	Compunet - editor wanted	Arnot
384	Jul	Compunet - Grainger quits	Grainger
71	Jan	Compunet - ICPUG CUG - details & access info	Grainger
425	Sep	Compunet - improvements	Kennedy
394	Jul	Compunet - move to new Super-micro	Arnot
383	Jul	Compunet - organiser	Grainger
190	Mar	Compunet - the true facts	Arnot
409	Jul	CP/M - Users Group details	Dunstall

373	Jul	Data transfer - C128-PC (Big Blue Reader - review)	Velleman
599	Nov	Data transfer - PET-PC	Hoskins
142	Mar	Data transfer from PET to PC	deGlanville
144	Mar	Data transfer from PET to PC	Reynolds

549	Nov	Deluxe Paint II upgrade	Todd
9	Jan	Design and History of the C64	Harvey
535	Nov	Desktop Publishing Show - report	Bremner
8	Jan	Devil's Dictionary	N-Gloucs-Grp
601	Nov	Digital Solutions - direct address	
187	Mar	Dimension - printer buffer for C64/C128 - review	Kennedy
273	May	Disabled Computer Users	Bate
396	Jul	Disabled Group - address	Wise

82	Jan	Discount Corner	Bickerstaff
203	Mar	Discount Corner	Bickerstaff
298	May	Discount Corner	Bickerstaff
403	Jul	Discount Corner	Bickerstaff
507	Sep	Discount Corner	Bickerstaff

204	Mar	Discounts - 3D interfaces	Bickerstaff
82	Jan	Discounts - ABACUS	Bickerstaff
82	Jan	Discounts - Adamsoft	Bickerstaff
623	Nov	Discounts - Amazing Computing & Ami Project	Bickerstaff
404	Jul	Discounts - Amiga 2nd drive (Eidersoft)	Bickerstaff
203	Mar	Discounts - Amiga 500 & 2000	Bickerstaff
623	Nov	Discounts - Amiga Centre	Bickerstaff
403	Jul	Discounts - Amiga Centre (was Arithmos)	Bickerstaff
623	Nov	Discounts - Amiga Workstation (68020/68881)	Bickerstaff
85	Jan	Discounts - AmigaDOS manual	Bickerstaff
403	Jul	Discounts - Ariadne Software (Genlock package)	Bickerstaff
203	Mar	Discounts - Ariolasoft	Bickerstaff
298	May	Discounts - Arithmos Amiga Centre	Bickerstaff
403	Jul	Discounts - AW Software Ltd. (C64/C128 software)	Bickerstaff
82	Jan	Discounts - Brain Boxes interfaces	Bickerstaff
85	Jan	Discounts - C128 Programmers ref Guide	Bickerstaff
82	Jan	Discounts - CBM hardware	Bickerstaff
403	Jul	Discounts - CBM hardware	Bickerstaff
623	Nov	Discounts - CBM PC compatibles	Bickerstaff
83	Jan	Discounts - Cheetah - C64 IEEE interface	Bickerstaff
82	Jan	Discounts - Commodore C128 Companion	Bickerstaff
299	May	Discounts - Commodore Custom Chips (Kasara)	Bickerstaff
623	Nov	Discounts - Compunet for Amiga	Bickerstaff
82	Jan	Discounts - Compute Books	Bickerstaff
203	Mar	Discounts - CP/M from Commodore	Bickerstaff
507	Sep	Discounts - David Murray withdrawal	Bickerstaff
85	Jan	Discounts - details on COMPUNET	Bickerstaff
85	Jan	Discounts - details on PRESTEL	Bickerstaff
508	Sep	Discounts - Digital Solutions Inc.	Bickerstaff
404	Jul	Discounts - Disks (Digipix)	Bickerstaff
83	Jan	Discounts - Duckworth books	Bickerstaff
83	Jan	Discounts - Entrepreneur	Bickerstaff
83	Jan	Discounts - Final Cartridge II	Bickerstaff
203	Mar	Discounts - First Software - no longer in CBM line	Bickerstaff
508	Sep	Discounts - Fontmaster 128	Bickerstaff
624	Nov	Discounts - Fontmaster 128	Bickerstaff
82	Jan	Discounts - General Information on using	Bickerstaff
508	Sep	Discounts - GEOS - new distributor	Bickerstaff

83	Jan	Discounts - GEOS 1.3 and GEOS programs	Bickerstaff
624	Nov	Discounts - GEOS for C128	Bickerstaff
404	Jul	Discounts - GEOS programs	Bickerstaff
83	Jan	Discounts - GRAFPAD II	Bickerstaff
83	Jan	Discounts - Haba Systems	Bickerstaff
203	Mar	Discounts - Handic - no longer in CBM line	Bickerstaff
84	Jan	Discounts - Impex Designs	Bickerstaff
507	Sep	Discounts - INFOMAT	Bickerstaff
623	Nov	Discounts - INFOMAT	Bickerstaff
203	Mar	Discounts - JCL - stopped discounts to ICPUG	Bickerstaff
84	Jan	Discounts - JCL Software	Bickerstaff
85	Jan	Discounts - John Wiley Books	Bickerstaff
298	May	Discounts - Jumpdisk Amiga newsletter on disk	Bickerstaff
299	May	Discounts - Kasara - C64/1541 & C128 ref guides	Bickerstaff
403	Jul	Discounts - Kickstart Guide To Amiga (book)	Bickerstaff
404	Jul	Discounts - LAN Computer Systems Ltd.	Bickerstaff
508	Sep	Discounts - LAN Computer Systems Ltd.	Bickerstaff
624	Nov	Discounts - LAN Computer Systems Ltd	Bickerstaff
404	Jul	Discounts - LOAD-IT	Bickerstaff
83	Jan	Discounts - Mains Cleaners - Tony Firshman	Bickerstaff
84	Jan	Discounts - Microtext teletext adaptor	Bickerstaff
404	Jul	Discounts - Microtext teletext adaptor	Bickerstaff
203	Mar	Discounts - Microwriter	Bickerstaff
203	Mar	Discounts - Mini-Office II	Bickerstaff
298	May	Discounts - Mini-Office II	Bickerstaff
404	Jul	Discounts - Mini-Office II	Bickerstaff
507	Sep	Discounts - Mini-Office II	Bickerstaff
624	Nov	Discounts - Mini-Office II	Bickerstaff
299	May	Discounts - Modula-2	Bickerstaff
624	Nov	Discounts - Mouse Plus (for use with NEOS mouse)	Bickerstaff
507	Sep	Discounts - MPS803 Printkit IV	Bickerstaff
83	Jan	Discounts - Pocket Writer, Planner & Filer	Bickerstaff
298	May	Discounts - Pocket Writer, Planner & Filer	Bickerstaff
84	Jan	Discounts - Precision Software	Bickerstaff
404	Jul	Discounts - Queen's Armes Hotel, Dorset	Bickerstaff
299	May	Discounts - Repairs & spares (VIC & C64 - Crawley)	Bickerstaff
403	Jul	Discounts - Repairs & Spares etc. (Gwent)	Bickerstaff
404	Jul	Discounts - Repairs (Chelmsford)	Bickerstaff
507	Sep	Discounts - SCULPT 3D	Bickerstaff
404	Jul	Discounts - Silosoft Electronics	Bickerstaff
203	Mar	Discounts - Software Specialists	Bickerstaff
299	May	Discounts - Software Specialists	Bickerstaff
508	Sep	Discounts - STAR NL10 printer	Bickerstaff
84	Jan	Discounts - Super Graphix printer interface	Bickerstaff
84	Jan	Discounts - Systems Software (Oxford)	Bickerstaff
298	May	Discounts - telephone enquiries	Bickerstaff
403	Jul	Discounts - telephone enquiries	Bickerstaff
623	Nov	Discounts - telephone enquiries	Bickerstaff
82	Jan	Discounts - The Last One	Bickerstaff
204	Mar	Discounts - Timeware - stopped discounts to ICPUG	Bickerstaff
85	Jan	Discounts - Timeware Ltd.	Bickerstaff
404	Jul	Discounts - Timeworks discount vouchers	Bickerstaff
508	Sep	Discounts - Timeworks discount vouchers - delay	Bickerstaff

299	May	Discounts - Timeworks through Cavendish	Bickerstaff
508	Sep	Discounts - Trilogic - new address	Bickerstaff
85	Jan	Discounts - Trojan Cadmaster	Bickerstaff
298	May	Discounts - Turbo ROM from Cockroach Software	Bickerstaff
508	Sep	Discounts - Viza Amiga Desktop software	Bickerstaff
85	Jan	Discounts - Viza software	Bickerstaff
508	Sep	Discounts - Viza software	Bickerstaff
624	Nov	Discounts - Word Perfect	Bickerstaff
85	Jan	Discounts - WORDCRAFT	Bickerstaff
85	Jan	Discounts - Y2 - Ruby-Comm	Bickerstaff
404	Jul	Discounts - Y2 - Ruby-Comm - revision	Bickerstaff
508	Sep	Discounts - Y2 - Ruby-Comm - revision	Bickerstaff
299	May	Discounts - Y2 computing - new address	Bickerstaff
164	Mar	Donations of hard/soft-ware wanted	Worsley
302	May	Donations of hard/soft-ware - some success	
197	Mar	DPS1101 - changing printwheels	Griffin
212	May	DPS1101 - problems with	Kennedy
366	Jul	DPS1101 - Superscript, use with	Longbottom
86	Jan	DPS1101 - using with Pocket Writer	Saunders
130	Mar	Easyscript - producing directory of several disks	Chastney-Parr
3	Jan	Editor's Notebook - 1987 and the newsletter	deGlanville
106	Mar	Editor's Notebook - Amiga A500 & A2000	deGlanville
414	Sep	Editor's Notebook - Gold & Schifreen court case	Bremner
306	May	Editor's Notebook - goodbye from old editors	deGlanville
210	May	Editor's Notebook - Laserjet+	deGlanville
519	Nov	Editor's Notebook - membership figures for '87	Bremner
307	May	Editor's Notebook - new editors introduction	Bremner
414	Sep	Editor's Notebook - new team	Bremner
106	Mar	Editor's Notebook - PC/AT Clones	deGlanville
518	Nov	Editor's Notebook - teething problems	Bremner
60	Jan	Exhibitions - Commodore - Apr87 - postponment	Kennedy
60	Jan	Exhibitions - Commodore - Jun87 - dates	Kennedy
321	Jul	Exhibitions - Commodore - Jun87 - raffle result	Bickerstaff
320	Jul	Exhibitions - Commodore - Jun87 - report	Bickerstaff
60	Jan	Exhibitions - Commodore - Nov86 - raffle result	Kennedy
60	Jan	Exhibitions - Commodore - Nov86 - report	Kennedy
535	Nov	Exhibitions - Desktop Publishing - Oct87 - report	Bremner
534	Nov	Exhibitions - PCW - Sep87 - raffle result	Bickerstaff
534	Nov	Exhibitions - PCW - Sep87 - report	Bickerstaff
534	Nov	Exhibitions - PCW - Sep88 - date & venue	Bickerstaff
179	Mar	Flemish translator required	Griffin
260	May	FORTH - history & description of the language	Hunt
610	Nov	FORTH - Software library	Hunt
206	Mar	Genealogy - any interest?	Farrer
301	May	Genealogy - some interest	Tester

250	May	GEOS - applications disks (see REVIEWS)	Massey
380	Jul	GEOS - Font disk - review	Massey
380	Jul	GEOS - Geofile+ - review	Massey
140	Mar	GEOS - update disk - review	Massey
18	Jan	GEOS In True Perspective	Massey
331	Jul	Grainger Gleanings (quotations)	Grainger
601	Nov	Haba Marketing - stopped Digital Solutions	
17	Jan	HELP line - delay in producing list	Todd
170	Mar	HELP line - full register of volunteers	Todd
393	Jul	HELP line - PASCAL	Bray
519	Nov	Iain's .. Inscriptions(?)	Graves
369	Jul	IBM - Personal System 2	Grainger
519	Nov	ICPUG - 1987 membership figures	Bremner
75	Jan	ICPUG - AGM 1987 - date	
117	Mar	ICPUG - AGM 1987 - date and venue	
27	Jan	ICPUG - an introduction	Kennedy
310	May	ICPUG - grant for meetings	Kennedy
308	May	ICPUG - list of officers for 1987	Kennedy
30	Jan	ICPUG - membership & publicity	Kennedy
28	Jan	ICPUG - ties	Kennedy
216	May	ICPUG - too elitist? some criticisms	Kennedy
466	Sep	Illegal Opcodes - a definitive study	Farnell
88	Jan	Index to 1986 Newsletters	Todd
129	Mar	Jim's Jottings - 128PLUS chip	Kennedy
128	Mar	Jim's Jottings - 1541/C64 ROM information	Kennedy
212	May	Jim's Jottings - 1571 bug update	Kennedy
311	May	Jim's Jottings - 1571 ROM bug update	Kennedy
426	Sep	Jim's Jottings - 1571 Version 4 update	Kennedy
128	Mar	Jim's Jottings - 1571/C128 ROM fixes	Kennedy
308	May	Jim's Jottings - AGM notes	Kennedy
424	Sep	Jim's Jottings - Amiga & printer buffers	Kennedy
317	May	Jim's Jottings - Amiga disk copying	Kennedy
319	May	Jim's Jottings - Amiga virus warning	Kennedy
319	May	Jim's Jottings - animation & colour-cycling	Kennedy
522	Nov	Jim's Jottings - Bible on disk	Kennedy
529	Nov	Jim's Jottings - Book reviews	Kennedy
126	Mar	Jim's Jottings - Brain Boxes - feedback	Kennedy
29	Jan	Jim's Jottings - Brain Boxes Interface	Kennedy
418	Sep	Jim's Jottings - Butterfield Letter	Kennedy
423	Sep	Jim's Jottings - C64 software library	Kennedy
213	May	Jim's Jottings - cassette drive problems	Kennedy
31	Jan	Jim's Jottings - CBUG - US Group for 700 users	Kennedy
530	Nov	Jim's Jottings - Christmas present suggestions	Kennedy
31	Jan	Jim's Jottings - COBOL SIG	Kennedy
419	Sep	Jim's Jottings - colour monitor preferences	Kennedy
319	May	Jim's Jottings - Commodore & software	Kennedy
317	May	Jim's Jottings - Compunet comments	Kennedy
425	Sep	Jim's Jottings - Compunet improvements	Kennedy
419	Sep	Jim's Jottings - computer standards	Kennedy
216	May	Jim's Jottings - criticisms of ICPUG	Kennedy
215	May	Jim's Jottings - delays in MRT's responses	Kennedy
212	May	Jim's Jottings - DPS1101 problems with	Kennedy
129	Mar	Jim's Jottings - Hacker - origin of word	Kennedy
523	Nov	Jim's Jottings - Hacker - origin of word	Kennedy
30	Jan	Jim's Jottings - ICPUG membership & publicity	Kennedy
310	May	Jim's Jottings - ICPUG National meetings grant	Kennedy
28	Jan	Jim's Jottings - ICPUG ties	Kennedy
313	May	Jim's Jottings - Inside Commodore DOS	Kennedy
27	Jan	Jim's Jottings - introduction to ICPUG	Kennedy
528	Nov	Jim's Jottings - investment software	Kennedy
315	May	Jim's Jottings - Kickstart Guide To Amiga	Kennedy
309	May	Jim's Jottings - Laserjet & newsletter	Kennedy
316	May	Jim's Jottings - Metacomco Shell for Amiga	Kennedy
216	May	Jim's Jottings - Microprose simulations - relaunch	Kennedy
127	Mar	Jim's Jottings - Mini Office II	Kennedy
426	Sep	Jim's Jottings - Modem House going bust	Kennedy
211	May	Jim's Jottings - new look Newsletter	Kennedy
214	May	Jim's Jottings - new machines - UNIX, IBM & Amiga	Kennedy
125	Mar	Jim's Jottings - new Newsletter format	Kennedy
29	Jan	Jim's Jottings - Newsletter - change to VizaWrite	Kennedy
214	May	Jim's Jottings - Newsletter articles	Kennedy
423	Sep	Jim's Jottings - newsletter articles	Kennedy
526	Nov	Jim's Jottings - passwords	Kennedy
424	Sep	Jim's Jottings - power cleaners	Kennedy
522	Nov	Jim's Jottings - Prestel Hack remembered	Kennedy
314	May	Jim's Jottings - printing Amiga files	Kennedy
418	Sep	Jim's Jottings - RAM/DOS reservations	Kennedy
31	Jan	Jim's Jottings - Star NL10c Superscript definition	Kennedy
126	Mar	Jim's Jottings - Viza & Precision products	Kennedy
585	Nov	Jubilee (Calendar Program) - review	Bailey
258	May	Jumpdisk - review (Amiga disk-magazine)	
292	May	Keyboard reconditioning (C128) by Supersoft	Oliver
293	May	Keyboard reconditioning - DIY	deGlanville
499	Sep	Language Listings	Grainger
499	Sep	Languages - availability & costs	Grainger
388	Jul	Languages - some support for in ICPUG	Grainger
324	Jul	Laserjet printer line draw demo	
478	Sep	Laserjet printer lines & font demo	Kennedy
407	Jul	Letter - 1541 drive stop query	Dent
206	Mar	Letter - 1571 and trading standards	Wright
204	Mar	Letter - 1571 worries	Porter
205	Mar	Letter - 80 columns on TV	Jeffs
625	Nov	Letter - 8000 series articles & info wanted	Spill
301	May	Letter - 8096 - composite video out wanted	Cachart
407	Jul	Letter - A500 with 1901 monitor (Trilogic mod)	Loewenthal
205	Mar	Letter - accolade for Wigmore House	Wright

510	Sep	Letter - Amateur Radio interest	Studdart
301	May	Letter - Amiga SIG wanted?	Clarke
302	May	Letter - balance of newsletter complaint	Mitchell
204	Mar	Letter - Basicode lives!	Bentley
418	Sep	Letter - Butterfield on ROMs, RAM/DOS & Kickstsrt	Kennedy
513	Sep	Letter - C128 hints & tips wanted	Murray
625	Nov	Letter - C16 to Plus4 size memory conversion	Sochanik
513	Sep	Letter - CBM repairs experiences & costs	Murray
513	Sep	Letter - commercial program backup copies	Murray
512	Sep	Letter - Compunet & Prestel comments	Murray
625	Nov	Letter - Compunet etc. - what are they?	Sochanik
626	Nov	Letter - Consistent Commodores?	Tanner
409	Jul	Letter - CP/M Users Group details	Dunstall
86	Jan	Letter - editorial Latin!	Dick
206	Mar	Letter - Genealogy Corner - any interest?	Farrer
513	Sep	Letter - Genealogy experiences	Barber
408	Jul	Letter - Genealogy interest	Coppard
301	May	Letter - Genealogy interest shown	Tester
86	Jan	Letter - GEOS problems	Potten
302	May	Letter - Gwent C64 contacts wanted	Cheek
86	Jan	Letter - Languages	Wright
302	May	Letter - lobby BBC for new series of Micro-Live	Reynolds
206	Mar	Letter - more on VizaStar	Barnet
407	Jul	Letter - MPS803 descenders wanted	Dent
406	Jul	Letter - Multimodem 64 problems	Allaway
625	Nov	Letter - newsletter criticisms	Sochanik
86	Jan	Letter - other languages?	Dunstall
408	Jul	Letter - Plus4 Peeks and Pokes	Brunt
625	Nov	Letter - Plus4 User Port advice wanted	Jones
408	Jul	Letter - Plus4/C64 80 columns wanted	Coppard
86	Jan	Letter - Pocket Writer & the DPS1101	Saunders
410	Jul	Letter - Portugese problems	
406	Jul	Letter - Psychiatric Nurses - programs wanted	Blatch
511	Sep	Letter - Seikosha GP100A C64 screen dump wanted	Gough
512	Sep	Letter - sequential file reading in Superscript	Tahill
625	Nov	Letter - Superbase - what is it?	Sochanik
511	Sep	Letter - Superbase 128 - help wanted	Thompson
300	May	Letter - VizaStar & Sideways	Snelling
300	May	Letter - Vizastar & Sideways	Hooker
300	May	Letter - VizaWrite backward block move bug	Emley
406	Jul	Letter - Vizawrite Classic - bugs	Allaway
510	Sep	Letter - Vizawrite Classic printer problem	Dick
409	Jul	Letter - Warranty repair frustrations	Thompson
116	Mar	Little Computer People - review	Harvey
598	Nov	Load-It (cassette alignment aid) - review	Griffin
57	Jan	Logical Operators - how to use them	Bowman
146	Mar	Mandelbrot newsletter - AMYGDALA	Syratt
377	Jul	Mapping The Commodore 128 book	Hauke
57	Jan	Memory Manipulation By Logical Operators	Bowman
369	Jul	Microcomputing - the future	Grainger
216	May	Microprose simulations - UK relaunch	Kennedy

580	Nov	MIDI - origins and brief description	Baldwin
324	Jul	Mike's Meanderings - 3.5 inch disk packets	Todd
542	Nov	Mike's Meanderings - ASCII standards	Todd
322	Jul	Mike's Meanderings - back again	Todd
17	Jan	Mike's Meanderings - Commodore in 1987	Todd
17	Jan	Mike's Meanderings - HELP line response	Todd
542	Nov	Mike's Meanderings - Newsletter format problems	Todd
323	Jul	Mike's Meanderings - price comparisons	Todd
542	Nov	Mike's Meanderings - Superbase Personal	Todd
323	Jul	Mike's Meanderings - Transactor	Todd
462	Sep	Mini-Office II - review	Gardner
426	Sep	Modem House - warning	Kennedy
186	Mar	Modula-2 - books available	Todd
181	Mar	Modula-2 - review	Todd
479	Sep	MPS1000 - a poem	Grainger
479	Sep	MPS1000 - C64 & IBM mode	Grainger
109	Mar	MPS2000 - full colour - short note	Broad
486	Sep	MPS803 descender ROM - review	Hoskins
447	Sep	MSDOS - transfer to 3.5 inch disks problems	Grainger
580	Nov	Music and the C128	Baldwin
474	Sep	NEOS Mouse - review	Wright
385	Jul	Network News - CBM Mags (letter on Prestel)	Grainger
383	Jul	Network News - CNET LINK - Compunet demo	Grainger
71	Jan	Network News - Compunet - ICPUG CUG - details	Grainger
383	Jul	Network News - Compunet organiser	Grainger
497	Sep	Network News - Compunet v Prestel hype	Grainger
195	Mar	Network News - Electronic Yellow Pages	Grainger
384	Jul	Network News - Grainger quits Compunet	Grainger
497	Sep	Network News - ICC - comments on	Grainger
72	Jan	Network News - Prestel - ICPUG area	Grainger
195	Mar	Network News - Prestel developments	Grainger
383	Jul	Network News - Prestel organiser	Grainger
195	Mar	Network News - Timefame	Grainger
107	Mar	New Amigas - a first look	Broad
110	Mar	News from CBM USA	Velleman
88	Jan	Newsletter - 1986 Index	Todd
385	Jul	Newsletter - bouquets!	Grainger
29	Jan	Newsletter - change to VizaWrite	Kennedy
302	May	Newsletter - complaint of imbalance	Mitchell
339	Jul	Newsletter - contributions	
488	Sep	Newsletter - contributions - required format	Kennedy
117	Mar	Newsletter - cover competition results	
299	May	Newsletter - new cover - plagiarised?	deGlanville
125	Mar	Newsletter - new format	Kennedy
211	May	Newsletter - new look	Kennedy

393	Jul	PASCAL - CP/M versions	Bray
393	Jul	PASCAL - HELP available	Bray
264	May	PASCAL - JRT - brief comments on	Bray
263	May	PASCAL - JRT manual - printing from disk	Bray
265	May	PASCAL - Oxford 64 - bugs in	Bray
393	Jul	PASCAL - software library	Bray
263	May	PASCAL - software library information	Bray
263	May	PASCAL - versions supported by ICPUG	Bray
373	Jul	PC - data transfer from C128 (Big Blue Reader)	Velleman
142	Mar	PC - data transfer from PET	deGlanville
599	Nov	PC - data transfer from PET	Hoskins
144	Mar	PC - data transfer from PET (3D IEEE/RS232 i/face)	Reynolds
230	May	PC - perils of converting from CBM to IBM PC	Oliver
79	Jan	PC - software library info	Reynolds
37	Jan	Perils of Portia, Agnus & Daphne - 1	Grainger
165	Mar	Perils of Portia, Agnus & Daphne - 2	Grainger
350	Jul	Perils of Portia, Agnus & Daphne - 3	Grainger
447	Sep	Perils of Portia, Agnus & Daphne - 4	Grainger
546	Nov	Perils of Portia, Agnus & Daphne - 5	Grainger
277	May	PET - RS232 with NETKIT	Lock
275	May	PET - upgrade to 80 columns	Lock
593	Nov	Phantom (64/1541 speedup) - review	Raynor
13	Jan	Plus4 - 3+1 - saving text to tape	Hunt
14	Jan	Plus4 - ASCII text - converting to 3+1 format	Hunt
408	Jul	Plus4 - Peeks & Pokes	Brunt
503	Sep	Plus4 - software library	Hunt
372	Jul	Plus4 - views on	Austin
53	Jan	Pocket Writer - review	Spreckley
86	Jan	Pocket Writer - using with DPS1101	Saunders
379	Jul	Postal Burn-up	
154	Mar	Precision Software - Customer Support line	Kennedy
45	Jan	Prestel - Amiga package - Ruby-View & -Comm	Todd
85	Jan	Prestel - discount details	Bickerstaff
195	Mar	Prestel - Electronic Yellow Pages	Grainger
72	Jan	Prestel - ICPUG area	Grainger
195	Mar	Prestel - keyword search	Grainger
383	Jul	Prestel - organiser	Grainger
195	Mar	Prestel - PSS connection possibility	Grainger
522	Nov	Prestel - the great Gold Hack remembered	Kennedy
424	Sep	Printers - Amiga & time-outs	Kennedy
294	May	Printers - Amiga printer cable - DIY	Kennedy
187	Mar	Printers - buffer for C64/C128 - review	Kennedy
197	Mar	Printers - DPS1101 - changing printwheels	Griffin
212	May	Printers - DPS1101 - problems with	Kennedy
366	Jul	Printers - DPS1101 - Superscript, use with	Longbottom
86	Jan	Printers - DPS1101 - using with Pocket Writer	Saunders

479	Sep	Printers - MPS1000 - C64 & IBM mode	Grainger
109	Mar	Printers - MPS2000 - full colour - short note	Broad
486	Sep	Printers - MPS803 descender ROM - review	Hoskins
386	Jul	Printers - Riteman Super C+ - changes to	Knowles
35	Jan	Printers - Star NL10 - review	Morgan
31	Jan	Printers - Star NL10c - Superscript definition	Kennedy
583	Nov	Printers - Universal Interface - review	Brown
482	Sep	Psion Organiser - review	Connolly
50	Jan	Public Domain Software - how much should it cost?	Reynolds
396	Jul	Regional Groups - Ayr	Wise
396	Jul	Regional Groups - Basildon	Wise
74	Jan	Regional Groups - Basingstoke	Wise
396	Jul	Regional Groups - Basingstoke	Wise
398	Jul	Regional Groups - Berlin	Wise
396	Jul	Regional Groups - Bury St. Edmunds	Wise
396	Jul	Regional Groups - Camberley	Wise
396	Jul	Regional Groups - Canterbury	Wise
396	Jul	Regional Groups - Coventry	Wise
74	Jan	Regional Groups - Derby	Wise
396	Jul	Regional Groups - Derby	Wise
396	Jul	Regional Groups - Dublin	Wise
396	Jul	Regional Groups - Durham	Wise
396	Jul	Regional Groups - Edinburgh	Wise
74	Jan	Regional Groups - Gloucestershire North	Wise
397	Jul	Regional Groups - Gloucestershire North	Wise
310	May	Regional Groups - grants for National meetings	Kennedy
74	Jan	Regional Groups - Hants North	Wise
397	Jul	Regional Groups - Hants North	Wise
74	Jan	Regional Groups - Herts North	Wise
397	Jul	Regional Groups - Kilmarnock	Wise
397	Jul	Regional Groups - Leicester	Wise
74	Jan	Regional Groups - Liverpool	Wise
397	Jul	Regional Groups - Liverpool	Wise
397	Jul	Regional Groups - Macclesfield	Wise
397	Jul	Regional Groups - Manchester	Wise
397	Jul	Regional Groups - Mildenhall	Wise
74	Jan	Regional Groups - Ministry of Defence	Wise
397	Jul	Regional Groups - Ministry of Defence	Wise
397	Jul	Regional Groups - Paisley	Wise
74	Jan	Regional Groups - Poole	Wise
397	Jul	Regional Groups - Poole	Wise
74	Jan	Regional Groups - Prudhoe-on-Tyne	Wise
397	Jul	Regional Groups - Prudhoe-on-Tyne	Wise
74	Jan	Regional Groups - Scarborough	Wise
398	Jul	Regional Groups - Scarborough	Wise
74	Jan	Regional Groups - Sheffield	Wise
398	Jul	Regional Groups - Sheffield	Wise
74	Jan	Regional Groups - Slough	Wise
398	Jul	Regional Groups - Slough	Wise
398	Jul	Regional Groups - Solent	Wise
75	Jan	Regional Groups - South East	Wise

398	Jul	Regional Groups - South East	Wise
75	Jan	Regional Groups - South East - mini-report	Wise
398	Jul	Regional Groups - Swanton Morley	Wise
398	Jul	Regional Groups - Wakefield	Wise
202	Mar	Regional Groups - Wakefield - anyone interested?	
75	Jan	Regional Groups - Wolverhampton	Wise
398	Jul	Regional Groups - Wolverhampton	Wise
398	Jul	Regional Groups - Yorkshire - West Riding	Wise
454	Sep	REVIEW - Amiga A2000	Bickerstaff
449	Sep	REVIEW - Analyze! V2	Miles
474	Sep	REVIEW - Artist 64 & NEOS mouse	Wright
373	Jul	REVIEW - Big Blue Reader (C128/IBM transfers)	Velleman
255	May	REVIEW - Butcher (Amiga pic manipulation)	Grove
570	Nov	REVIEW - Butcher V2.0 upgrade	Annal
187	Mar	REVIEW - Dimension printer buffer C64/C128	Kennedy
289	May	REVIEW - Dolphin DOS for C128	Broad
287	May	REVIEW - Dolphin DOS for C64	Moran
251	May	REVIEW - GEOS - Calendar	Massey
250	May	REVIEW - GEOS - Deskpack 1	Massey
380	Jul	REVIEW - GEOS - Font disk	Massey
250	May	REVIEW - GEOS - Fontpack 1	Massey
380	Jul	REVIEW - GEOS - Geofile+	Massey
251	May	REVIEW - GEOS - Graphics Grabber	Massey
252	May	REVIEW - GEOS - Icon editor	Massey
254	May	REVIEW - GEOS - Text Grabber	Massey
140	Mar	REVIEW - GEOS - update disk	Massey
252	May	REVIEW - GEOS - Writer's Workshop	Massey
18	Jan	REVIEW - GEOS for C64	Massey
585	Nov	REVIEW - Jubilee (Calendar program)	Bailey
258	May	REVIEW - Jumpdisk (Amiga disk-magazine)	
116	Mar	REVIEW - Little Computer People	Harvey
598	Nov	REVIEW - Load-It (cassette alignment aid)	Griffin
462	Sep	REVIEW - Mini-Office II	Gardner
181	Mar	REVIEW - Modula-2	Todd
486	Sep	REVIEW - MPS803 Descender ROM	Hoskins
593	Nov	REVIEW - Phantom (64/1541 speedup)	Raynor
53	Jan	REVIEW - Pocket Writer (C128 Word Processor)	Spreckley
482	Sep	REVIEW - Psion Organiser	Connolly
282	May	REVIEW - Ruby-Comm	Bickerstaff
138	Mar	REVIEW - Sideways (spreadsheet printer prog)	Kennedy
35	Jan	REVIEW - Star NL10 printer	Morgan
42	Jan	REVIEW - Swift Spreadsheet C64/C128	Thornton
168	Mar	REVIEW - Tasword 64	Foster
22	Jan	REVIEW - The Last One	Dolphin
178	Mar	REVIEW - Turbo ROM (C128) from Cockroach Software	Raynor
583	Nov	REVIEW - Universal Printer Interface	Brown
3	Jan	REVIEW - VizaStar	Kennedy
118	Mar	REVIEW - VizaWrite Classic 128	Higham
558	Nov	REVIEW - WordPerfect for Amiga	Kennedy

386	Jul	Riteman Super C+ printer - changes to	Knowles
282	May	Ruby-Comm for Amiga - review	Bickerstaff
540	Nov	Sermon on The Count (parody)	Burkinshaw
162	Mar	SFD1001 disk drive - use with Superbase	Kennedy
138	Mar	Sideways (spreadsheet printer prog) - review	Kennedy
396	Jul	SIG - 1520 plotter group - address	Wise
41	Jan	SIG - 1520 plotter group - newsletter available	Bentley
189	Mar	SIG - 1520 plotter group - newsletter available	
301	May	SIG - Amateur Radio - AMRAC newsletter	Cachart
31	Jan	SIG - COBOL - anyone interested?	Kennedy
396	Jul	SIG - Disabled Group	Wise
382	Jul	SIG - Superpet 9000	Velleman
80	Jan	Software library - Amiga - directory disk	Bickerstaff
297	May	Software library - Amiga - new organisers	Griffin
399	Jul	Software Library - Amiga - procedure	Bickerstaff
504	Sep	Software library - C128 - 17 new disks	Wright
402	Jul	Software library - C128 - bulletin board available	
609	Nov	Software library - C128 - disks A1,U2 & U3	Wright
81	Jan	Software library - C128 - disks available	Griffin
201	Mar	Software library - C128 - disks C1 G3 CL4	Harrison-Smith
297	May	Software library - C128 - disks M1 S4	Harrison-Smith
201	Mar	Software library - C64 - disk catalogue	Harrison-Smith
201	Mar	Software library - C64 - disks 15/16	Harrison-Smith
297	May	Software library - C64 - Germany/Forces - copier	Griffin
400	Jul	Software library - C64 - reorganisation	Hartley
616	Nov	Software library - C64 - total revision	Griffin
496	Sep	Software library - COMAL - 0.14 - cass. versions	Grainger
491	Sep	Software library - COMAL - disks CT10/11 - notes	Grainger
65	Jan	Software library - COMAL 0.14 - 12 disks	Grainger
67	Jan	Software library - COMAL 0.14 - disks CT 8/9	Grainger
335	Jul	Software library - COMAL 0.14 - disks CT10/11	Grainger
602	Nov	Software library - COMAL 0.14 - disks CT12/13	Grainger
65	Jan	Software library - COMAL 2.01 - 15 disks	Grainger
67	Jan	Software library - COMAL 2.01 - disks CT 8/9	Grainger
335	Jul	Software library - COMAL 2.01 - disks CT10/11	Grainger
602	Nov	Software library - COMAL 2.01 - disks CT12/13	Grainger
504	Sep	Software library - CP/M - 15 new disks	Wright
610	Nov	Software library - FORTH	Hunt
76	Jan	Software library - HOW IT WORKS	Griffin
608	Nov	Software library - HOW IT WORKS	Griffin
400	Jul	Software library - Overseas changes	Harrison-Smith
263	May	Software library - PASCAL - information	Bray
393	Jul	Software library - PASCAL - request for contribs	Bray
79	Jan	Software library - PC - 'Park' utility	Reynolds
79	Jan	Software library - PC - catalogue disk	Reynolds

198	Mar	Software library - PC - comments and additions	Reynolds
401	Jul	Software library - PC - comments and additions	Arnot
79	Jan	Software library - PC - databases	Reynolds
297	May	Software library - PC - new organiser	Griffin
615	Nov	Software library - Plus4 7 disks available	Hunt
503	Sep	Software library - Plus4 - details of availablity	Hunt
297	May	Software library - some changes	Griffin
297	May	Software library - VIC - source of material	Griffin
35	Jan	Star NL10 pdfs - assistance	Morgan
278	May	Star NL10 pdfs - assistance - change of address	Morgan
35	Jan	Star NL10 printer - review	Morgan
154	Mar	Super* Corner	Kennedy
267	May	Super* Corner	Kennedy
362	Jul	Super* Corner	Kennedy
427	Sep	Super* Corner	Kennedy
154	Mar	Superbase - 1571 problems and version 2.07	Kennedy
340	Jul	Superbase - Amiga	Todd
272	May	Superbase - Amiga - dates ordered by month/day	Kennedy
273	May	Superbase - Amiga - day of year feature	Kennedy
269	May	Superbase - Amiga - logic & Filters	Kennedy
269	May	Superbase - Amiga - manual errata	Kennedy
269	May	Superbase - Amiga - RE-ORGANISE - how to use	Kennedy
549	Nov	Superbase - Amiga - working in RAM:	Todd
427	Sep	Superbase - C128 new version	Kennedy
268	May	Superbase - date as key field by month & day	Kennedy
428	Sep	Superbase - direct reading of data	Blair
428	Sep	Superbase - disk data format	Blair
365	Jul	Superbase - duplicate keys in 64 version	Austin
154	Mar	Superbase - extra CR supression with semi-colon	Kennedy
427	Sep	Superbase - inserting fields in	Kennedy
363	Jul	Superbase - key field size & disk space usage	Kennedy
158	Mar	Superbase - labels progam	Kennedy
160	Mar	Superbase - MailMerge with Superscript	Kennedy
159	Mar	Superbase - months, search for in date fields	Kennedy
154	Mar	Superbase - non-English keyboard versions	Kennedy
362	Jul	Superbase - output to file bug	Kennedy
268	May	Superbase - poke-ing with 8-bit versions	Kennedy
162	Mar	Superbase - SFD1001 disk drive	Kennedy
363	Jul	Superbase - Stringfellows	Kennedy
267	May	Superbase - the book - errata sheet	Kennedy
267	May	Superbase - tips for 8-bit versions	Kennedy
158	Mar	Superdesk - integrated features for C128 only	Kennedy
382	Jul	Superpet 9000 - SIG wanted (self-help group)	Velleman
220	May	Superscript - accounts package	Miles

439	Sep	Superscript - defaults file customisation	Erskine
366	Jul	Superscript - DPS1101 printer	Longbottom
160	Mar	Superscript - file structure using TabData	Kennedy
160	Mar	Superscript - MailMerge with Superbase	Kennedy
154	Mar	Superscript - non-English keyboard versions	Kennedy
31	Jan	Superscript - Star NL10c printer definition	Kennedy
202	Mar	Superscript - upgrade from Easyscript warning	Barker
42	Jan	Swift Spreadsheet (C64/C128) - review	Thornton
168	Mar	Tasword 64 - review	Foster
577	Nov	Texas Tales	Clay
22	Jan	The Last One - review	Dolphin
447	Sep	Tilt'n'Turn - two prices	Grainger
165	Mar	Tilt'n'Turn copy holder	Grainger
350	Jul	Tilt'n'Turn price increase	Grainger
300	May	Timeworks Software - new distributor	Snelling
545	Nov	Transactor Amiga issue available in 1988	Clay
332	Jul	Trivia - COMAL Soliloquy	Grainger
8	Jan	Trivia - Devil's Dictionary	N-Gloucs-Grp
461	Sep	Trivia - jokes	Grainger
479	Sep	Trivia - MPS1000 poem	Grainger
331	Jul	Trivia - quotations	Grainger
349	Jul	Trivia - some acronyms	Grainger
540	Nov	Trivia - The Sermon on The Count (parody)	Burkinshaw
178	Mar	Turbo ROM (C128) from Cockroach Software review	Raynor
583	Nov	Universal printer Interface - review	Brown
587	Nov	VizaSpell - hints & tips	McDonald
206	Mar	VizaStar - comments on	Barnet
3	Jan	VizaStar - review	Kennedy
300	May	VizaStar - using with Sideways printer program	Snelling
300	May	Vizastar - using with Sideways printer program	Hooker
300	May	VizaWrite Classic 128 - block move bug	Emley
406	Jul	Vizawrite Classic 128 - bugs	Allaway
118	Mar	VizaWrite Classic 128 - review	Higham
200	Mar	Welwyn Speech 64 cart - problems with	Halliwell
558	Nov	WordPerfect for Amiga - review	Kennedy

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ICPUG Software Libraries

Organiser: Joe Griffin, Clovelly, Lynwick St, Rudgwick, Horsham, W Sussex RH12 3DJ

Please remember that the libraries are operated on an entirely voluntary basis and, unlike many of the American User Groups, ICPUG DOES NOT CHARGE A COPYING FEE.

The Libraries contain PUBLIC DOMAIN programs from a wide range of sources, including our own members and other user groups. WE DO NOT SUPPORT SOFTWARE PIRACY.

Members may obtain ALL the library material. In order to retain a measure of control over the work-load imposed on the Copiers, however, we do restrict the amount of material that may be obtained on any one request.

Disk users may obtain up to two disk copies at a time (Amiga five).
Tape users may obtain up to four programs, from any one disk.
(Please use a C-60 or C-90 tape ---a C-15 or C-30 may be too short.)

To obtain copies of catalogue or library disks, please send:

A statement of what you want
Your membership number
Disks (stating FORMAT --- type of drive --- required) or Tape
  We will NOT use a disk as a 'flippy' as it can damage the disk drive
Pre-addressed reusable packaging suitable for return
  There have been occasions when disks have arrived bent in half!
  Please ensure that packing is adequate
Return postage --- SEND STAMPS
  Overseas members should send International Reply Coupons
  (allow at least one-and-a-half IRCs per disk sent)

PET --- Joe Griffin (see above)

VIC --- Joe Griffin (see above)

COMAL --- Brian Grainger, 73 Minehead Way, Stevenage, Herts SG1 2HZ

1520 Plotter --- WGC Austin, School of Geography, Faculty of Humanities,
Newcastle Polytechnic, Lipman Building, Sandyford Rd,
Newcastle upon Tyne NE1 8ST

1520 (Tape) --- John Bentley, 38 Conway Rd, Taplow, Maidenhead, Berks SL6 0LD

PC Organiser: Tim Arnot, Flat 3, 26/28 Osborne Rd, Southsea, Hants PO5 3LT
Please always send your requests to the copier listed below who deals with the CATALGOUE CATEGORY of material you want. Catalogue from Peter Crowder --- see below.

A--D Henry Velleman, 52 Ventnor Drive, Totteridge, London N20 8BS
E--O Peter Crowder, 27 Crawford Drive, Liverpool L15 8AE
P--Z David Harrow, 28 Phoenix Drive, Wateringbury, Maidstone, Kent ME18 5DR

Software Libraries (cont.)

Plus 4 (& C-16) --- Richard Hunt, 45 Cumberland Rd, Bromley, Kent BR2 0PL

C-64 Organiser: David Miller, 38 Exeter Gardens, Ilford, Essex IG1 3LB
Please send requests to the copier listed below who deals with the first letter of your surname

A--B David Miller, 38 Exeter Gardens, Ilford, Essex IG1 3LB
C--F R Burns, 48 Grasmere Rd, Royton, Oldham, Lancs OL2 6SR
G--K Geoff Crowther, 60 Fleckney Rd, Kibworth Beauchamp, Leics LE8 0HE
L--O James Mason, 35 Woodburn Drive, Dalkeith, Midlotien, EH22 2AZ
P--S Nigel Corry, 4 Horsted Way, Rochester. Kent ME1 2XY
T--Z Peter Crowder --- see PC Library, E--O, opposite

Germany (inc. BAOR) Lt AR Perkins, 11 Trenchard Rd, RAF Digby, Sleaford, Lincs

Overseas (other) & 8050/8250 --- Joe Griffin --- see opposite

128 --- Organiser and software collator: Chris Wright (see below), 37 Cecil Street, Lytham, Lacashire, FY8 5NN, England. Please send requests to the librarian listed below who deals with the first letter of your surname

A--C Bill Gardner, 156 Henwood Rd, Compton, Wolverhampton WV6 8PA
D--J Tom Nuttal, 43 Renshaw Drive, Bury, Lancs, BL6 7NJ
K--R Robert Dally, 6 Derwent Crescent, Clitheroe, Lancs, BB7 2PW
S--Z Dave Tew, 4 Acombe Cresc, Hambrook Pk, Charlton Kings,
Cheltenham, Glos GL52 6YH
Overseas (All) Derek Clifford, 36 Hanover Avenue, Feltham, Middlesex, TW13 4JW
8050/8250, Z80 and 1581 requests to Chris Wright (see above)
128 BULLETIN BOARD on 0902-745337 (24hrs) see p402 (1987)
(PC users can also log onto this board)

Amiga Organiser: Peter Miles, The Queen's Armes Hotel, Charmouth, Dorset DT6 6QF.
Write to him with/ about your programs. Disk copies should not be requested from the librarians.

Amiga Disk Copiers: (Not more than 5 disks at one time)
Specific ICPUG library disks and the directory disk for these, please send your requests to the copier listed below who deals with the first letter of your surname

A--I David Annal, 142 Windermere Road, Norbury, London, SW16 5HE
J--R Peter Reeve, 2 Court Road, Tunbridge Wells, Kent TN4 8ED
S-Z Chris Wright (see 128 above)

Public Domain (non-ICPUG) - Fish, Amicus & Demo disks and the directory disk for these, please send your requests to the copier listed below who deals with the first letter of your surname

A--K John Bickerstaff, 45 Brookscroft, Linton Glade, Croydon, Surrey CR0 9NA
L--Z John Grove, The Cobnuts, Cobbs Close, Ightham, Sevenoaks, Kent TN14 9DB